INSTITUTO DE ALTOS ESTUDOS MILITARES

SECÇÃO DE ENSINO DE ADMINISTRAÇÃO

TILD

A CONSTITUIÇÃO MODULAR DAS UNIDADES DE APOIO LOGÍSTICO

Modalidade e implicações estruturais

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Antes de iniciarmos a apresentação do nosso trabalho, propomos uma primeira reflexão por parte dos nossos leitores, ao teor duma frase formulada por um comentador de assuntos militares de prestígio, que realça a necessidade de haver um empenho político para fazer face à mudança nos nossos dias e que afecta directamente o tema deste trabalho e que se traduz por...

"NA ALTURA DA MOSTRA PÚBLICA DO SEU PROGRAMA,
O GOVERNO DEVE EXPLICAR SE QUER SALVAR,
OU CONTINUAR A ENTERRAR,
AS SUAS FORÇAS (MAL) A(R)MADAS.
E DEPOIS TEM DE CUMPRIR O PROMETIDO"

Nuno Rogeiro
Novembro de 1999

GLOSSÁRIO

Abast	Abastecimento
A/D	Apoio Directo
ACE	Allied Command for Europe
ADAMS	Allied Deployment And Movement System
Adjt	Adjunto
AG	Assembleia Geral
AJP1	Allied Joint Publication 1
ALRR	Agrupamento Logístico de Reacção Rápida
ARRC	ACE Rapid Reaction Corp (Corpo de Reacção Rápida)
ASCC	Comandante da Componente de Serviços do Exército
BAI	Brigada Aerotransportada Independente
Bat	Batalhão
BGSLE	Bases Gerais do Sistema Logístico do Exército
BIAT	Batalhão de Infantaria Aerotransportado
BLD	Batalhão Ligeiro de Desembarque
BLI	Brigada ligeira de Intervenção
Brig	Brigada/Brigadeiro
C2	Comando e Controlo
CAlm	Contra Almirante
CB	Campo de Batalha
CC	Carro de Combate
CCD	Centro de Comunicações Destacável
CComGI	Companhia de Comunicações e Gestão de Informação
CE	Corpo de Exército
CEng	Companhia de Engenharia
CCEM	Conselho de Chefes de Estado Maior
CEDM	Conceito Estratégico de Defesa Militar
CEM	Conceito Estratégico Militar
CEME	Chefe do Estado Maior do Exército
CEMGFA	Chefe de Estado Maior General das Forças Armadas
CFLT	Comando da Força Logística Terrestre (exército francês)
C4I2	Comando, Controlo, Comunicações, Computadores, Informações e Informação (Intelligence)
C2I	Comando, Controlo e Informações
CI	Comunidade Internacional
CIApEng	Companhia de Infra-estruturas e Apoio de Engenharia
CIU	Código de Identificação da Unidade
CJTF	Combined Joint Task Force
Cmd	Comando
Cmdt	Comandante
CN	Comando Naval
CNAD	Conferência dos Directores Nacionais de Armamento da OTAN
COC	Comando Operacional Conjunto
COFA	Comando Operacional da Força Aérea
COFAR	Comando Operacional das Forças Armadas
COFT	Comando Operacional das Forças Terrestres
CONUS	Continental United States
COSFN	Componente Operacional do Sistema de Forças Nacional

CPLP	Comunidade dos Países de Língua Oficial Portuguesa
CRP	Constituição da República Portuguesa
CS	Conselho de Segurança (da ONU)
CSDN	Conselho Superior de Defesa Nacional
CTm	Companhia de Transmissões
CUIL	Lista de Referências Comuns das Unidades
DAE	Destacamento de Acções Especiais
DECT	Digital European Cardless
DestApSvc	Destacamento de Apoio de Serviços
DGMEx	Depósito Geral de Material do Exército
DLRI	Destacamento Logístico de Reacção Imediata
Div	Divisão
DMDM	Directiva Ministerial de Defesa Militar
DPF	Directiva de Planeamento de Forças
EAC	Escalões Acima de Corpo de Exército
EAD	Escalões Acima de Divisão
EEINP	Espaço Estratégico de Interesse Nacional Permanente
EEIN	Espaço Estratégico de Interesse Nacional
EM	Estado Maior
EMC	Estado Maior Conjunto
EMF	Estado Maior da Força (exército francês)
EMGFA	Estado Maior General das Forças Armadas
ERec	Esquadrão de Reconhecimento
EsqPE	Esquadrão de Polícia do Exército
EUA	Estados Unidos da América
FA	Forças Armadas
FCRI	Força Conjunta de Reacção Imediata
FCRR	Força Conjunta de Reacção Rápida
FEI'S	Incrementos Funcionais Emulativos ou módulos Multifuncionais
FND	Força Nacional Destacada
FOP	Forças de Projecção
FOREF	Forças de Reforço
FORES	Forças de Reserva
GE	Guerra Electrónica
Gen	General
GU	Grande Unidade
HCM	Hospital Cirúrgico Móvel
IAEM	Instituto de Altos Estudos Militares
IBERLAND	Comando Regional OTAN da Península Ibérica
IEPG	Grupo Europeu Independente de Programas
IFOR	Implementation Force
In	Inimigo
ITTM	Instruções Temporárias de Transmissões
IESD	Iniciativa Europeia de Segurança e Defesa
ISDN	Integrate System Digital Network
LAN	Local Area Network
LDNFA	Lei de Defesa Nacional e das Forças Armadas
Lig	Ligeira
LOBOFA	Lei Orgânica de Bases da Organização das Forças Armadas
LPM	Lei de Programação Militar

LSM	Lei do Serviço Militar
MDN	Ministro/Ministério da Defesa Nacional
MITM – T	Missão, Inimigo, Terreno, Meios e Tempo disponível
Mort	Morteiros
MOOTW	Mission Operations Other Than War (Operações de Não Guerra)
MOP	Materiais Orgânicos Principais
NAMSA	Agência de Manutenção e Aprovisionamento da OTAN
NC3A	NATO Consultation, Command and Control Agency
NEP	Norma de Execução Permanente
NL	Holanda
OAP	Operações de Apoio a Paz
OI	Organização Internacional
ONU	Organização das Nações Unidas
OOTW	Operations Other Than War (Operações de Não Guerra)
OSCE	Organização para a Segurança e Cooperação na Europa
OTAN	Organização do Tratado do Atlântico Norte
PC	Posto de Comando
PC COMFOR	Posto de Comando do Comandante da Força
PC COPER	Posto de Comando do Comandante da Operação
PC COMTACTER	Posto de Comando do Comando Táctico Terrestre
PCPrinc	Posto de Comando Principal
PelDefAAMsLigPortátil	Pelotão de Defesa Antiaérea de Mísseis Ligeiros Portáteis
PDN	Política de Defesa Nacional
PESC	Política Externa e de Segurança Comum
PfP	Parceria para a Paz
PN	Polícia Naval
QG	Quartel General
SACLANT	Supreme Allied Commander
Sapad	Sapadores
Sec	Secção
Seg	Segurança
SFE	Sistema de Forças do Exército
SFN	Sistema de Forças Nacional
SHAPE	Supreme Headquarters Allied Powers in Europe
TACP	Tactical Air Control Party
TN	Território Nacional
TO	Teatro de Operações
TRADOC	US Army Training and Doctrine Command
UE	União Europeia
UEB	Unidade Escalão Batalhão
UEC	Unidade Escalão Companhia
UEO	União Europeia Ocidental
UK	Reino Unido
ULT	Unidade Logística Territorial
UTM	Unidade de Terminal Multimodal
VCB	Vigilância do Campo de Batalha
WEAG	Grupo Europeu Ocidental de Armamentos
WWW	Worldwide Web

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1. INTRODUÇÃO

a. Enquadramento

A conjuntura actual internacional obrigou a reanalisar e a restruturar a metodologia de emprego da força militar nos dias de hoje.

Os dispositivos de forças estruturadas em grandes unidades de constituição fixa revelaram-se pouco adequados ao novo tipo de conflitos que têm surgido um pouco por todo o mundo no pós guerra fria.

As forças actuais estão configuradas para actuarem como um todo e qualquer separação de elementos, além de difícil de executar, tem resultado geralmente numa drástica redução de desempenho.

O tema que nos foi atribuído – A Constituição Modular das Unidades de Apoio Logístico, Modalidade e implicações estruturais — visa efectuar o aperfeiçoamento do Apoio Logístico actual bem como a sua adequação aos novos desafios e novas missões atribuidas nomeadamente no que concerne à participação das Forças Armadas, em especial o Exército, inseridas em Forças Multinacionais, às grandes distâncias a que esses apoios tem de ser prestados e à rapidez de execução que os mesmos requerem.

Para que se atinja tal desiderato é necessário uma grande flexibilidade, mobilidade e grandes níveis de prontidão em termos de sustentação das forças e para a qual a solução actual aponta para a modularidade das forças das quais destacamos as que prestam o apoio logístico.

Sem dúvida que, se o Estado pretende participar neste tipo de forças, obtendo assim maior projecção internacional bem como os dividendos internacionais inerentes, terá de se empenhar mais notoriamente no reequipamento das suas Forças Armadas, com especial incidência para o ramo Exército, por forma a adequar o seu Sistema Logístico aos conceitos e procedimentos em vigor principalmente no âmbito da OTAN.

b. Finalidade

Ao desenvolvermos este trabalho pretendemos alcançar o objectivo de apresentar no final uma proposta, tanto quanto possível, exequível e credível no âmbito da constituição modular das unidades de apoio logístico.

Durante este trabalho caracterizaremos também de forma sucinta o actual ambiente operacional, a evolução previsível e os cenários de emprego da força terrestre, definiremos o conceito de modularidade, abordaremos as características do apoio logístico propondo uma organização tipo para uma unidade de apoio logístico modular, apresentaremos algumas modalidades de acção das quais proporemos uma organização modular que no nosso entender, uma vez implementada, se traduzirá numa melhor rentabilização dos meios humanos e materiais disponíveis, sempre escassos, através da reunião das sinergias necessárias e o aumento da eficácia e eficiência que se pretende alcançar.

c. <u>Pressupostos Gerais</u>

O tema em análise encontra-se pouco desenvolvido em termos de implementação modular na óptica do Apoio Logístico em Portugal e é muito rudimentar nos restantes países europeus, por isso entendemos que os Estados Unidos da América (EUA) são, actualmente, o único país com a dimensão e experiência acumulada suficiente para já possuir uma efectiva actividade e doutrina logística modular elaborada e implementada. Decidimos assim, neste trabalho, levar em linha de conta, basicamente, esta experiência até porque, é esta a doutrina que acaba normalmente por transitar, com pequenas alterações e adaptações, para a doutrina da Organização do Tratado do Atlântico Norte (OTAN) numa fase posterior.

A elaboração levou em linha de conta os seguintes pressupostos:

(1) Independentemente das propostas de alteração a efectuar, assegurar sempre o continuo e ininterrupto apoio logístico ao Exército, por forma a permitir cumprir a sua atribuição fundamental de defesa do Território Nacional (TN);

(2) A necessidade de assegurar a interoperabilidade, normalização dos meios, procedimentos e processamento da informação utilizados na organização modular definida, tendo por base o estrito cumprimento, nas melhores condições de integração possível, no seio das organizações às quais o País aderiu, especificamente, a OTAN e a União Europeia Ocidental (UEO);

(3) Levar em linha de conta a escassez de recursos e as restrições financeiras e orçamentais que hoje em dia se verificam, apresentando assim soluções que, apesar de

requererem algum investimento, não venham a ser consideradas utópicas e descabidas;

(4) Sempre que possível, considerar o factor, tempo de resposta às solicitações, como um dos elementos mais importantes a assegurar na conjuntura em que previsivelmente se irão desenrolar as futuras missões atribuídas ao Exército;

(5) O respeito pelas orientações definidas na Directiva de Planeamento de Forças do Chefe de Estado Maior General das Forças Armadas (DPF/CEMGFA/99) de 1 de Setembro de 1999.

2. SITUAÇÃO

a. Caracterização dos Conflitos Actuais

Na actual conjuntura internacional, a segurança adquiriu novas vertentes que se estendem desde a protecção dos direitos humanos e da preservação ambiental, ao restabelecimento e manutenção da paz nas regiões do globo afectadas por conflitos passando por operações de evacuação de cidadãos nacionais. Vive-se uma situação de conflitualidade e de insegurança, surgindo a necessidade de aprofundar a cooperação entre os estados e as organizações internacionais, com a finalidade de implementar um sistema colectivo de segurança abrangente.[1]

Portugal, integrando as organizações internacionais e regionais (ONU, OSCE, OTAN, UE e UEO), participando com recursos humanos, materiais e financeiros nas operações de apoio à paz em África, na ex-Jugoslávia e mais recentemente no Sudeste Asiático em Timor, sob a égide da ONU e da OTAN, apoiando e cooperando tecnicamente com os países africanos lusófonos, vem assumindo, de acordo com as suas capacidades, importantes responsabilidades no quadro da comunidade internacional e de projecção do País na Cena Internacional.[2]

A continuação da participação do nosso exército em forças multinacionais, em consonância com os compromissos assumidos por Portugal no âmbito das organizações internacionais e regionais que integra, a aplicação do conceito de "forças conjuntas multinacionais", a necessidade de reduzir efectivos e de optimizar estruturas organizacionais impostas por orçamentos de defesa cada vez menores, faz com que a modularidade das forças e sua

[1] RODRIGUES, Jocelino, Major Cav, A Organização Modular das Forças pg. 3.
2 RODRIGUES, Jocelino, Major Cav, op. Cit., pg. 3

sustentação seja um imperativo para um Exército que se quer de dimensões reduzidas mas de grande operacionalidade e capacidade de sustentação.

b. <u>O Novo Exército</u>

O Decreto-lei 50/93 de 26 de Fevereiro, ao caracterizar o novo Exército, define-o como versátil, mais pequeno, mais eficaz, que reflicta igualmente no seu âmbito uma capacidade efectiva de garantir os compromissos internacionais do Estado, numa época em que a segurança se apresenta internacionalmente cada vez mais colectiva.[3]

O Sistema de Forças Nacional de 1997 (SFN97) aprovado em Conselho Superior de Defesa Nacional (CSDN) de 9 de Fevereiro de 1998 que vigora no período de 1998 – 2003 é o referencial para a definição das forças a desenvolver neste estudo.

c. <u>Caracterização do novo Exército</u>

A resposta militar aos novos desafios está nos conceitos definidos como capacidades militares das Forças Armadas, entre as quais destacamos a flexibilidade, mobilidade, sustentabilidade e informação estratégica, que incidem na capacidade de dispor de capacidade de projecção adequada e na disponibilidade das forças e meios, o que por sua vez requer um alto grau de operacionalidade das unidades e de capacidade de sustentação. Tudo isto com a finalidade de colocar as forças de forma rápida onde os interesses nacionais sejam ameaçados, evitando deste modo os custos elevados da colocação da força de forma permanente.

Daqui resulta uma das características que as forças do século XXI deverão possuir, que é o da capacidade de cumprir uma vasta gama de missões em cenários diferentes, o mesmo é dizer que disponham de um alto grau de polivalência.[4]

Esta situação exige umas Forças Armadas distintas das herdadas da guerra fria, nas quais os conceitos de flexibilidade, modularidade e capacidade de projecção sejam características imprescindíveis a todas as unidades militares. No futuro, as operações de combate que envolvam as forças terrestres necessitarão de ser rápidas, intensas e terão lugar em frentes extensas e profundas. As formações terão de ser substancialmente mais pequenas que a actual

[3] RODRIGUES, Jocelino, Major Cav, op. Cit., pg. 6
[4] RODRIGUES, Jocelino, Major Cav, op. Cit., pg 7

organização divisionária e terão de operar de forma independente por períodos longos. Nestas condições, uma força deve possuir um grau de prontidão e sustentação operacional tal que lhe permita actuar rapidamente e aí permanecer após receber a missão [5].

d. <u>Sustentação das Forças do futuro. Concentração da actividade logística</u>

Na óptica da sustentação das forças e das suas implicações logísticas no Exército do futuro estamos crentes que a chamada "concentração da actividade logística"[6] (ver Anexo A) será uma nova metodologia fundamental para a aplicação do conceito de modularidade por forma a aumentar a eficiência das forças destacadas consistindo na fusão da informação, da logística e das tecnologias de transporte (mobilidade estratégica) tendo em vista fornecer a mais rápida resposta às crises, identificando e enviando de imediato os reabastecimentos necessários à força, apesar de estes ainda puderem encontrar-se em deslocamento, fornecendo a sustentação e os módulos logísticos pré configurados directamente quer ao nível estratégico, operacional e táctico das operações.

Para o Exército, a "concentração da actividade logística" será a fusão da logística com as tecnologias da informação, permitindo assim a criação de unidades de apoio logístico flexíveis e eficazes e desta forma a elaboração de uma nova doutrina de conceitos de apoio por forma a permitir uma rápida resposta às crises e a entrega directa dos meios exclusivamente necessários a cada nível das operações militares a desenrolar.

A tecnologia será assim mais uma vez, o grande impulsionador do conceito da "concentração da actividade logística". Elementos de combate mais pequenos com equipamento de fácil manutenção, produzidos a partir de materiais mais duráveis que partilhem elementos sobressalentes comuns com outros componentes de equipamentos específicos e equipamentos de outros componentes, reduzirão significativamente o volume e a complexidade do sistema de reabastecimento. Soluções avançadas de gestão e controlo de inventários, gestão e distribuição de material, transporte e armazenagem, renivelamento e redireccionamento automático permitirão a visualização integral dos meios disponíveis e o atingir dos objectivos previstos no

[5] RODRIGUES, Jocelino, Major Cav, op. cit., pg. 7.
[6] Focused Logistics - ARMY VISION 2010, Sustain the Force, CECOM Vision 2010, EUA

conceito das capacidades de reabastecimento. Sensores semi-automáticos poderão iniciar o reabastecimento ou a substituição das actividades em curso antes delas ocorrerem.

Além das possibilidades de treino na área logística que esta novas tecnologias irão permitir em termos de teste e análise dos planos logísticos existentes antes das operações ocorrerem, existe ainda uma vasta área de avanços no apoio ao pessoal através de técnicas de cuidados médicos que incluem “triagem via Internet ou Intranet” e a chamada “Telemedicina”, que poderão aumentar consideravelmente a sobrevivência de todos os membros de uma eventual força conjunta.

3. POSSÍVEIS CENÁRIOS DE EMPREGO DAS FORÇAS E SUAS IMPLICAÇÕES LOGÍSTICAS

Verifica-se uma crescente tendência para que as organizações regionais de segurança, nas quais Portugal se integra, designadamente a OTAN, sejam chamadas a intervir militarmente em missões de apoio à paz, através de constituição de forças multinacionais, nas quais as forças do Exército têm forte probabilidade de participar, à semelhança do que já aconteceu na Bósnia e mais recentemente no Kosovo e em Timor.[7]

Esta introdução à directiva do General CEME sobre a "Criação das Forças de Projecção do Exército" alerta para aquele que será o mais provável emprego das Forças Armadas nos tempos mais próximos. Contudo, poderemos ser chamados a cumprir um maior leque de missões, conforme a seguir se discrimina.[8]

a. Alta probabilidade:

- Missões do interesse do Estado, no âmbito da ONU ou de organizações regionais de defesa e segurança — Operações de Apoio à Paz (OAP);
- Missões humanitárias, no mesmo âmbito;
- Situações de crise ou conflito regionais que possam afectar os interesses nacionais, dentro e fora do TN;
- Missões de interesse público, em apoio de outras estruturas do Estado;
- Missões de protecção e evacuação de comunidades portuguesas no estrangeiro;

[7] BARRENTO, António, General CEME, "Criação das Forças de Projecção do Exército", pg. I.
[8] RODRIGUES, Jocelino, Major Cav, op. cit., pgs. 9 e 10.

- No âmbito da cooperação, nomeadamente com os países africanos e asiáticos lusófonos;
- Na preservação da segurança e valorização do ambiente, perante missões de interesse público devidamente estruturadas e bem definidas;

b. Média Probabilidade:

- Missões de defesa colectiva, no âmbito das organizações regionais de defesa e segurança;
- Missões no âmbito de coligações "ad hoc", para defesa de interesses e/ou recursos especiais;

c. Baixa Probabilidade:

- Missões de defesa territorial directa da integridade dos espaços nacionais;
- Missões no âmbito de um confronto nuclear.

d. Implicações Logísticas

Todas as missões que o Exército possa vir a desempenhar tem implicações de carácter logístico que requerem uma capacidade de resposta que seja oportuna, eficaz e de grande flexibilidade.

Para se obterem tais características, é necessária a existência de unidades logísticas de elevado grau de prontidão por forma a corresponderem às novas solicitações previstas nas missões anteriormente referidas.

4. ANÁLISE DO SISTEMA LOGÍSTICO

a. Organização do Sistema Logístico actual

Ao participarmos cada vez mais com o nosso Exército em acções de Forças Multinacionais, no respeito dos compromissos assumidos por Portugal no âmbito das Organizações Internacionais e Regionais de que faz parte, verifica-se o aumento da necessidade de aperfeiçoar o Sistema Logístico e as suas metodologias de emprego. Trata-se no fundamental de restruturar um Sistema Logístico misto actual que opera por Serviços nos altos escalões e funcionalmente nos baixos, o qual apresenta alguma complexidade de actuação actual, convertendo-o num sistema globalmente funcional em que a simplificação e normalização de procedimentos permita um rápido fluxo de informação permitindo uma eficaz gestão logística e

assim, uma coordenação e eficiência de execução muito maior e na qual o nosso tema da modularidade em análise se enquadra podendo desempenhar um papel fundamental, ou seja, caminharmos cada vez mais para um Sistema Logístico Funcional efectivo que permita com a contribuição da constituição modular das Unidades de Apoio Logístico, para uma maior prontidão no apoio ao Sistema de Armas nomeadamente às Forças Nacionais Destacadas.

b. <u>Adequação do Sistema Logístico às novas solicitações no seio da OTAN.</u>

Ao longo da sua existência, a OTAN desenvolveu acções no âmbito da standardização dos armamentos e equipamentos e na sistematização dos procedimentos logísticos, estabelecendo uma doutrina logística.

As exigências inerentes ao cumprimento das novas missões, determinam que a Aliança considere o apoio logístico não como uma responsabilidade específica de cada estado-membro mas como uma actividade de cooperação que proporcione a economia de esforços, a eficiência e o incremento da capacidade de comando e controlo dos Comandantes das Forças Multinacionais.[9]

A interoperabilidade entre os equipamentos principais e a sistematização e uniformização de procedimentos e informações de âmbito logístico, tomar-se-ão, cada vez mais indispensáveis à sustentação de forças susceptíveis de actuarem em áreas afastadas das suas bases logísticas nacionais.

O Novo Conceito Estratégico da Aliança e a Directiva para a sua implementação, a reestruturação das forças e o conceito de reforço, tem, naturalmente, implicações na doutrina logística. Deste modo, desde 1992 que se processam acções de revisão dos conceitos logísticos, tendo o MC319 introduzido alterações aos princípios logísticos, entre as quais se salientam:

- O conceito da responsabilidade colectiva, da OTAN e dos seus Membros, no apoio às Forças Multinacionais;

[9] SILVÉRIO, Jorge Manuel, Cor Inf, "<u>A participação do Exército em Forças Multinacionais e o aperfeiçoamento do Sistema Logístico</u>"

- O incremento da autoridade do Comandante da Força Multinacional sobre a gestão dos recursos logísticos, visando o aumento da sua capacidade de comando e controlo;
- A necessidade de aumentar a flexibilidade e mobilidade do sistema logístico, adequando-o ao sistema operacional;
- O aperfeiçoamento do sistema de informação logística, tendo em vista a eficiência na gestão e na coordenação das actividades logísticas;
- A constituição adequada de reservas de abastecimentos, como garantia da continuidade no apoio às operações;
- A interoperabilidade dos equipamentos e materiais orgânicos principais e a intermutabílidade nos abastecimentos de uso comum;
- A compatibilização dos sistemas de comunicação na OTAN;
- A capacidade no âmbito da função transporte e o aperfeiçoamento e integração das acções de planeamento e gestão dos movimentos de transporte das forças e dos abastecimentos inerentes à sua sustentação.

No prosseguimento das acções de aperfeiçoamento do sistema logístico, o ACE Rapid Reaction Corp (ARRC), através do Documento 2450.2.2./ARS PSC/94 estabeleceu níveis mínimos de standardização para as suas forças, designadamente no que respeita à interoperabilidade dos equipamentos e a intermutabílidade dos abastecimentos das classes I, III e VI.

A atribuição ao ARRC da Brigada Aerotransportada Independente (BAI) implica, necessariamente, a assunção dos princípios e procedimentos logísticos adaptados por este Corpo e um esforço no aperfeiçoamento do Sistema Logístico Nacional.

Para além da adaptação dos princípios e procedimentos logísticos às exigências das novas missões, a Aliança vem aperfeiçoando as suas políticas e estruturas no âmbito da cooperação nos domínios dos equipamentos de campanha e no estabelecimento de acordos entre a Conferência dos Directores Nacionais de Armamento (CNAD) e a nova estrutura da UEO, o

Grupo Europeu Ocidental de Armamentos (WEAG) que substituiu o Grupo Europeu Independente de Programas (IEPG). Entretanto, a "Nova Organização de Standardização", criada pela Aliança em Janeiro de 1995, vem a impulsionar o desenvolvimento de programas de padronização de equipamentos e de sistematização de procedimentos, em cooperação com os países da Parceria para a Paz e as organizações civis de dimensão internacional que operam no âmbito das actividades de standardização.

No quadro do esforço desenvolvido pela OTAN para aperfeiçoar o apoio logístico a prestar às Forças Multinacionais, salienta-se no âmbito da função transporte, o Allied Deployment And Movement System (ADAMS). Trata-se de um novo sistema OTAN, desenvolvido pela Nato Consultation, Command and Control Agency (NC3A), sob a supervisão do Supreme Headquarters Allied Powers in Europe (SHAPE) e em coordenação com os Estados Membros, com a finalidade de facilitar o planeamento e a gestão dos movimentos de transporte, das forças e dos abastecimentos indispensáveis à sua sustentação. O sistema contribuirá para o aperfeiçoamento da coordenação no deslocamento das Forças Multinacionais, reduzindo o tempo de planeamento e aumentando a sua mobilidade.

Realçamos a primordial importância que os pontos acima referidos assumem, nas acções logísticas a desenvolver no quadro das novas missões, com especial ênfase para a função transporte estratégico, o processamento dos dados logísticos e a aplicação da modularidade.

Passamos de seguida, a analisar o conceito de modularidade e o seu contributo para o aumento da eficácia e eficiência do Apoio Logístico actual no ponto de vista do Exército dos EUA o qual nos parece estar perfeitamente adequado à nossa concepção e noção do mesmo.

5. CONCEITO MILITAR DE MODULARIDADE [10]

a. Enquadramento

Face à experiência, dimensão, doutrina disponível e resultados efectivos obtidos por parte do Exército dos EUA nas suas mais recentes intervenções em missões no exterior, bem como ao facto de ser o elemento fundamental e preponderante da OTAN ao nível da produção de

[10] Internet, "http://tradoc.army.mil/tpubs/pams/p525-77.htm

doutrina, na qual o nosso País se integra, haverá a tendência natural a adoptarmos, cada vez mais, do seu "*modus operandi"* ao nível de procedimentos, da interoperabilidade dos meios e equipamentos bem como ao seu emprego normalizado. Entendemos assim, efectuar uma análise mais profunda ao sistema, doutrina e organização modular que o Exército dos EUA está a utilizar em termos de emprego das suas unidades de apoio logístico tendo em vista retirar as ilações, com a adaptações inerentes às características e condicionamentos do nosso Exército por forma a que se efectue um, cada vez melhor e mais eficiente apoio logístico.

Nas crises e conflitos actuais é frequente os Comandantes solicitarem a execução de uma actividade funcional que não requer o destacamento de uma unidade de apoio logístico como um todo. Porém, ao desmembrar unidades pode resultar que a unidade donde provém essa parcela fique incapaz de executar a suas missões (por falta de pessoal específico e de equipamento).

A modularidade prevê e provê uma força metodicamente elaborada que contribua para solucionar os problemas referidos no parágrafo anterior. Aumenta a possibilidade e a capacidade do Exército em responder rapidamente a um leque alargado de contingências globais através de uma força que possui em si as funções e meios necessários, movimentando um mínimo de tropas e de equipamento. É uma metodologia que põe a quantidade correcta das funções logísticas adequadas bem como os meios necessárias no lugar certo no momento certo (Ver Anexo B). Ao mesmo tempo, deixa também para trás o remanescente da unidade que poderá ser utilizada mais tarde ou que pode vir a ser atribuída para apoio a uma outra missão noutro local. Num Exército que projecte forças, esta capacidade de movimentar as forças de apoio será cada vez mais crítica e indispensável.

A modularidade permite ao Comandante da Componente Serviços do Exército (ASCC) desenvolver conjuntos de apoios mais adaptados à necessidade de balancear unidades de manobra, de apoio de combate (CS) e de apoio logístico com o objectivo de cumprirem a missão atribuída.

b. <u>Qual a necessidade do conceito de modularidade.</u>

No passado, esperava-se que as unidades do Exército actuassem como parte de uma força

integrada preparada para o cenário da guerra fria, principalmente na Europa. Este cenário implicava a existência de forças colocadas à frente e desdobradas em grandes teatros de operações bem definidos. Visava também o reforço dessas forças através de reforços volumosos que envolviam muitas unidades por longos períodos de tempo.

Neste contexto, as "unidades-tarefa" (task organizing[11]) foram os meios primários a ser utilizados para assegurar as funções necessárias. Agruparam-se meios para realizar tarefas específicas. A organização de tarefas é o processo de formar uma unidade-tarefa, com graus variados de capacidades, para períodos de tempo pequenos ou específicos. Uma unidade-tarefa é definida também como "um agrupamento temporário de forças designadas para realizar uma missão particular". A unidade-tarefa envolve ainda a distribuição de recursos disponíveis aos comandos subordinados.

Historicamente, as unidades-tarefa que apoiam o desenvolvimento de forças não apuraram nem optimizaram os recursos necessários porque os meios são distribuídos por unidade, e não através da função requerida. A maioria das unidades dos Escalões Acima de Divisão (EAD) e acima de Corpo de Exército (EAC) são criadas para fornecer apoio a uma grande quantidade de pessoal ou armazenar ou processar uma grande capacidade de abastecimentos. A unidade-tarefa e a definição da força necessitam frequentemente da utilização de "fatias" das unidades. Esta situação provoca frequentemente que a porção residual da " unidade fatiada " fique incapaz de continuar a cumprir o seu espectro de missões devido a perda de pessoal chave ou equipamento.

O Exército de hoje deve poder responder ao crescente tipo de empregos potenciais em guerra ou em Operações de Não Guerra (OOTW). Os desafios futuros ao Exército incluirão a participação através de Bases Logísticas Continentais nos Estados Unidos da América (CONUS) (Unidades Logísticas Territoriais) e de bases avançadas preparadas para executar operações de forças de projecção. A disponibilidade de possuir recursos de transporte estratégicos ficará assim ainda mais crítica. Além disso, o Exército deve esperar aumentar a sua participação em

[11] Task organizing – FM 101-5-1

articulação combinada com os outros ramos, com forças multinacionais, e com operações inter-organizações (NATO e UEO). A resposta a estes desafios requer uma melhor organização dos meios das forças para aumento da sua eficiência a qual pode ser providenciada pela modularidade.

A modularidade permite a separação de funções e meios de uma unidade-mãe e adaptar tais funções e meios para o emprego adequado no interior de uma força de projecção. A unidade-mãe permanecerá operativa e manterá a capacidade de executar todas as suas missões funcionais, embora a um nível mais reduzido.

A modularidade proporcionará ao Comandante da força projectada uma força que é intermutável, expansível e adaptável para satisfazer variadas missões e necessidades. Assim, o Exército poderá maximizar de forma apropriada as exigências de força e aperfeiçoar a utilização da mobilidade estratégica disponível. (Ver Anexo C)

c. Ameaça.

Considerando que a metodologia da modularidade é aplicada a unidades e organizações empregues dentro do teatro das operações militares, estas serão expostas a uma diversidade de ameaças. A cadeia de comando existente será responsável pela protecção destas unidades e terá de integrar esta protecção em planos de segurança. As unidades serão susceptíveis de ser localizadas por ameaças devidas a reconhecimentos, vigilância, e fontes de aquisição designadas. As unidades podem atingidas através do terrorismo, via substâncias químicas, ataques biológicos e nucleares.

d. Contexto Operacional do Conceito

A modularidade aplica-se a elementos duma força que incluem o comando e controlo, o desempenho de missões que abrangem todo o espectro de missões militares (operações de paz, conflito e guerra).

A modularidade também se aplica a elementos duma força que participe numa força conjunta, combinada ou multinacional.

e. Limitações

A modularidade baseia o seu sucesso no assegurar das comunicações e na automatização dos sistemas.

f. Definição militar de modularidade

A modularidade é a metodologia de articular uma força por forma a poder-se definir as formas de atribuição de elementos que, por sua vez, são intermutáveis, expansíveis e adaptáveis tendo em vista a satisfação das necessidades de mudança do Exército.

A modularidade desenvolve a adaptação de funções e meios às necessidades das forças de projecção em toda a gama de operações militares.

A modularidade fornece a metodologia para que o Exército adquira a estrutura que optimize a rápida constituição duma força para que uma missão de contingência possa ser executada de forma pronta e eficiente.

A modularidade fornece os meios que permitem a rápida identificação, mobilização e desenvolvimento de elementos capazes de desempenhar uma missão duma forma doutrinariamente consistente e sustentada num ambiente operacional conjunto e combinado.

g. Considerações a ter para a modularidade

Para alcançar a modularidade o Exército necessita de examinar os processos em que se baseiam as actuais necessidades para movimentar e desenvolver forças a deslocar. Por exemplo:

As funções que não são previsíveis vir a ser empregues em pequenos contingentes ou em fases iniciais de contingentes maiores podem ser eliminadas na fase inicial do desenvolvimento da força.

As necessidades baseadas e calculadas por escalões podem ter de ser eliminadas – e.g., eliminar escalões que induzem a redundâncias ou a duplicação de necessidades; combinar as necessidades duma mesma unidade desenvolvida em múltiplos escalões.

h. Capacidades da modularidade

A modularidade permite às unidades:

(1) **Resposta oportuna**. A modularidade permite fornecer um elemento inicial cujas funções e meios vão de encontro às necessidades dos comandantes. Permite a fácil identificação e deslocamento de funções específicas num curto espaço de tempo. Permite ainda a estruturação adequada da força nas funções necessárias num ambiente de projecção de forças. Fornece também as necessárias funções e meios com menor emprego de transportes estratégicos e a consequente redução das necessidades de sustentação.

(2) **Economia**. A modularidade permite ao Exército atingir economias de escala ao deslocar apenas as funções e meios estritamente necessárias para a missão. Somente as funções e meios necessários são fornecidos nos locais e tempo apropriado. Esta situação é particularmente crucial quando se consideram as limitadas capacidades de transporte estratégico existentes e escassez de recursos.

(3) **Eficiência**. A modularidade facilita a condução e adaptação da formação da força à missão, inimigo, terreno, meios e tempo disponível (MITM-T). Fornece meios mais flexíveis ao comandante para cumprir a sua missão. Apesar de ultimamente se terem definido alguns tipos de regras de atribuição de funções e meios, a regra fundamental que ainda é considerada é a das necessidades do comandante da força.

(4) **Flexibilidade**. A modularidade permite que se execute um apoio que se expanda, se contraia e que seja capaz de se interligar com funções e meios diversificados a operar na mesma área.

(5) **Selectividade**. A modularidade aplica-se a unidades seleccionadas que satisfazem o critério e o perfil da missão (e.g. necessidade de desenvolver forças antecipadamente) De realçar que algumas unidades possuem já características modulares não requerendo portanto essa conversão.

(6) **Identificação**. Os documentos que definem os Materiais Orgânicos Principais (MOP) das unidades devem identificar claramente os seus sub-elementos (e.g. pelotão, secção, esquadra ou equipa) nomeados para efeito de modularidade por forma a que seja possível a rápida identificação da estrutura mínima de força necessária ao deslocamento

e às necessidades efectivas para o cumprimento da missão. A identificação posterior de unidades ao nível das tabelas modificadas de Materiais Orgânicos Principais pode ser feita pelo Código de Identificação da Unidade (CIU).

i. <u>Tipos de aproximação à modularidade</u>

Existem muitas formas de se chegar à modularidade. O conceito aqui referido foca apenas duas aproximações – Incrementos Funcionais Emulativos (Functionally Emulative Increments - FEIs) ou Módulos Multifuncionais e os Elementos de Configuração Modular (Modular Designed Elements - MCEs) ou Módulos Unifuncionais. (Ver Anexo D).

(1) **Incrementos Funcionais Emulativos (FEIs) ou Módulos Multifuncionais.**

(a) **Definição**. Unidades que são organizadas por incrementos por forma a que cada incremento reflicta a essência completa (função) da unidade. Os incrementos são intermutáveis, expansíveis (para o todo ou parte do todo) e dimensionáveis para satisfazer alterações baseadas na MITM-T.

(b) **Aplicação**. Os módulos multifuncionais são aplicados primariamente ao nível das unidades de apoio logístico do escalão Divisão ou Corpo de Exército. A projecção de forças a partir do Continente dos EUA (CONUS) ou de localizações avançadas previstas em planos de contingência fazem face ao desafio de assegurar a sustentação das operações. Os módulos multifuncionais permitem aos comandantes das unidades de apoio logístico a selecção oportuna das funções e meios mais importantes para uma força de projecção face a qualquer tipo de operação.

Os Módulos Multifuncionais serão normalmente aplicados às unidades que se prevê venham a ser utilizadas numa fase inicial do deslocamento para a operação e portanto antes do deslocamento da unidade como um todo (ou quando for requerido pela duração específica da MITM-T).

(c) **Características.** Os Módulos Multifuncionais possibilitam a revisão da organização das unidades como um todo.

Os Módulos Multifuncionais são elaborados por forma a ser desenvolvidos

incrementalmente sem perda de eficiência. Alguns cenários podem necessitar dum mínimo de meios durante um longo período de tempo (e.g. Macedónia), enquanto que outros podem requerer a montagem de um sistema completo de meios para apoiar em pleno um teatro de operações (TO) e a sua evolução (e.g. Operação Escudo do Deserto).

A unidade de apoio logístico pode nunca vir a ser empenhada como um todo no deslocamento para o TO. Os meios que são enviados (que permitem a expansão do apoio) são baseados nas condições e necessidades provocadas pela MITM-T.

Os Módulos Multifuncionais podem operar independentemente. Cada incremento contém em si as funções das suas unidades-mães (com uma menor capacidade de actuação).

Os Módulos Multifuncionais são expansíveis, podem contrair-se e tem capacidade de se ligar a outros Módulos Multifuncionais. Os Módulos Multifuncionais podem portanto fundir-se com outros Módulos Multifuncionais.

Os Módulos Multifuncionais tem de ser planeados por forma a possuírem em si alguma capacidade de sustentação autónoma mesmo que colocados em regiões austeras e separados das suas unidades de apoio.

(2) **Elementos de Configuração Modular (MDE) ou Módulos Unifuncionais.**

(a) **Definição**. São unidades constituídas por elementos distintos com capacidades específicas. Os elementos são partes específicas da unidade que, quando combinados, criam a capacidade funcional da unidade. Cada elemento subordinado não espelha a capacidade funcional de toda a unidade.

(b) **Aplicação**. Os Módulos Unifuncionais serão aplicados primariamente às unidades combatentes e de apoio de combate. Podem também ser aplicadas a unidades seleccionadas de apoio logístico (e.g. de apoio directo (A/D), equipas de contacto de manutenção, podem ser configurados elementos modulares específicos ou ainda como Módulos Multifuncionais). A configuração modular destes elementos facilitará a

criação efectiva de blocos de forças para fazer face a operações de contingência ao permitir uma melhor integração quer das unidades de combate e de apoio de combate, quer das unidades de apoio logístico baseada na resposta pronta no teatro das operações e às necessidades e contingências da missão.

O papel e as necessidades em unidades de apoio logístico podem variar imenso. Na perspectiva da configuração modular, utilizar estas unidades em operações de contingência deve permitir a sua projecção com um mínimo de capacidades essenciais com módulos adicionais e outros elementos fornecidos conforme seja requerido pela MITM-T.

O desenho modular do apoio logístico às operações implica que os seus responsáveis a pensem, planeiem e accionem cuidadosamente e que avaliem o apoio a fornecer a cada operação. As possibilidades do desenho modular das unidades de apoio logístico devem permitir prestar o apoio essencial às unidades de manobra, de apoio de combate e de apoio logístico para permitir o cumprimento da sua missão.

(c) **Características.** Os Módulos Unifuncionais consistem em módulos e elementos com capacidades específicas.

Este desenho modular de elementos permite que sub-elementos possam ser separados da unidade-mãe e adaptados a uma força de contingência por um período indeterminado de tempo.

A Configuração Modular dos Módulos Unifuncionais pode ser obtido através da divisão de uma unidade em elementos separados. Por exemplo, o módulo ou elemento principal de uma unidade (unidade-mãe) pode permanecer numa localização segura (permanentemente ou até ser enviada para a frente) enquanto que o modulo da força de projecção ou seu elemento é deslocado independentemente da sua unidade base.

Os Módulos Unifuncionais podem ser criados como equipas por forma a actuar como reforços para unidades que requerem capacidades específicas para operações

específicas.

Os Módulos Unifuncionais permitem a projecção de módulos específicos e elementos com capacidades que satisfazem as necessidades mínimas de um comandante numa operação de contingência, através de módulos adicionais ou elementos que fornecem as necessidades requeridas.

(3) **Outros pontos de vista para a modularidade.**

Outras formas de estruturar parecem recair sobre as seguintes categorias (ver Anexo E).

(a) **Módulos do tipo "ninho"**. Estes módulos podem ser formados e combinados em múltiplos do módulo básico (e.g. esquadra ou secção) dependendo das necessidades.

(b) **Módulos Funcionais**. Deste ponto de vista, cada módulo executa uma função específica.

(c) **Módulos Avançados**. Neste caso, as funções seleccionadas são criadas no módulo avançado.

O restante da unidade deve estar preparado para ser destacado para apoiar a continuidade das operações.

j. <u>Considerações sobre a modularidade na Projecção de Forças.</u>

A análise MITM-T do comandante permite determinar as funções e os meios que vão ser necessários. Esta análise leva-nos à escolha das funções e aos meios que devemos accionar tendo em vista o deslocamento da força.

A modularidade serve para optimizar o emprego da mobilidade estratégica (e.g. contingentes mais pequenos, mais autónomos, com elementos totalmente habilitados ao desempenho da suas actividades e com a possibilidade de serem destacados antecipadamente afim de prepararem as infra-estruturas necessárias à missão).

6. <u>ÁREAS A APERFEIÇOAR NO SISTEMA LOGÍSTICO DO EXÉRCITO</u>

Para que a constituição modular das unidades de apoio logístico vingue, entendemos ser necessário executar algumas medidas por forma a facilitar a sua implementação tais como as que a seguir vamos descriminar.

As Nações que, no âmbito da sua política externa, pretendam utilizar as suas Forças Armadas em conjunção com Forças Multinacionais, assumem grandes responsabilidades no que concerne ao reequipamento e sustentação dessas forças.

A participação do Exército em Forças Multinacionais, flexíveis, altamente móveis e exigindo elevados padrões de interoperabilidade, coloca-lhes a necessidade de adequar o seu sistema logístico aos conceitos e procedimentos logísticos utilizados no apoio a estas forças.

Assim, assume particular importância a necessidade de proceder ao aperfeiçoamento do Sistema Logístico do Exército, adequando a sua doutrina, simplificando procedimentos, racionalizando estruturas e, definindo as responsabilidades dos subsistemas envolvidos na execução das tarefas inerentes ao planeamento, aprontamento e sustentação das forças susceptíveis de integrarem Forças Multinacionais, das quais destacamos as que consideramos mais relevantes para o aumento da eficácia e prontidão de resposta às solicitações futuras.

a. <u>Informação e Catalogação.</u>

Na base de uma gestão logística que possibilite uma ajustada resposta ás solicitações de apoio em tempo de paz, crise ou guerra, ou no âmbito das operações a realizar no exterior do Território Nacional, está, necessariamente, um moderno e eficiente sistema de informação e catalogação, assente em suporte informático.

A eficiência na integração de procedimentos e informações logísticas, constitui um dos pressupostos fundamentais que permitem ao Comandante de uma Força Multinacional, em situações que exijam grande mobilidade e flexibilidade, conjugar as componentes táctica e logística por forma a cumprir a sua missão. Neste sentido, a Aliança salienta a necessidade de aumentar a Autoridade do Comandante da Força Multinacional sobre a gestão dos recursos logísticos, visando o incremento da sua capacidade de comando e controlo.

A participação do Exército em Forças Multinacionais pressupõe um grande empenhamento no acompanhamento dos programas de standardização de equipamentos e procedimentos em desenvolvimento na OTAN e na UEO. Salienta-se, também, a importância de que se reveste para a interoperabilidade dos equipamentos das forças da OTAN o desenvolvimento de uma

"Lista Comum de Referências" (CUIL), no âmbito da Agência de Manutenção e Aprovisionamento da OTAN (NAMSA), e que respeita à identificação dos sistemas de armas utilizadas por mais de um país e ao reabastecimento das suas componentes.

Considera-se, assim, que se deverá proceder com urgência à conclusão dos trabalhos que se vêm desenvolvendo no âmbito do Sistema Integrado de Informação Logística (SIILog), integrando os equipamentos e abastecimentos actualmente geridos pelas Direcções dos Serviços. Por outro lado, importa complementar esta acção com as informações colhidas pelos Grupos de Trabalho que operam no âmbito da OTAN, a fim de dotar o sistema da capacidade de interacção com os Sistemas de Informação Logística operados pelas Forças Multinacionais na OTAN e na UEO.

b. <u>Concentração de Infra-estruturas.</u>

Para além da redefinição das tarefas actualmente atribuídas às Direcções dos Serviços através da implementação de uma Logística Funcional aos mais altos escalões, considera-se de primordial importância, prosseguir nas acções de concentração dos Depósitos e numa segunda fase, na concentração em Unidades Logísticas Modulares (chegando eventualmente até à concentração das Escolas Práticas dos Serviços numa “Escola de Logística”), criadas de raiz ou através da reunião de elementos e componentes logísticos existentes no TN, a implementar na mesma região visando a racionalização das estruturas, a eficiência no processamento da gestão das actividades logísticas e acima de tudo permitindo uma resposta face àa localização que sua que deverá ser bem servida de todos os tipos de terminais de transporte (aeroportos, portos, ferrovias e rede estradal) para que se efectue o rápido envio do apoio necessário a qualquer força, nomeadamente a forças destacadas no exterior. Com efeito, a total concentração dos Depósitos de Materiais, ainda dispersos pela área urbana de Lisboa, num Depósito Geral de Material do Exército com efectiva capacidade informática, constitui um objectivo a atingir no quadro de modernização da gestão e armazenagem dos equipamentos e abastecimentos do Exército.

c. <u>Mobilidade Estratégica.</u>

Mas para que os pontos anteriores possam efectivamente contribuir para a prossecução de uma nova era de eficiência no apoio logístico a prestar e, face às distâncias a que se estimam vir a situar os teatros de operações futuros (TO's) (Balcãs, África Sub-Sahariana, Timor) é necessário possuir meios de transporte estratégicos em quantidade e capacidade suficientes para os quais a frota de Hércules C-130 existente nos parece ser manifestamente insuficiente e ao qual o sistema de frete de meios aéreos nos parece ser inadequado além de se criar uma dependência que não se coaduna com os interesses Nacionais e com a necessidade de uma rápida solução das crises existentes. Em termos navais existe também uma séria dependência no facto de não possuirmos um meio naval (Navio Logístico Polivalente) de grande porte para transporte de meios humanos, logísticos e outros de grande tonelagem para os diferentes TO's, evitando-se assim o recurso ao frete de navios com os elevados custos que este tipo de operações acarreta.

d. <u>Doutrina.</u>

A evolução da doutrina logística está, naturalmente, dependente da conclusão dos trabalhos respeitantes ao Sistema Integrado de Informação Logística. Sem a consecução deste objectivo, não se torna viável a materializarão de um sistema logístico funcional, fundamentado numa gestão logística mais eficiente e em procedimentos logísticos adequados ao apoio às novas missões. O aperfeiçoamento do sistema logístico deverá resultar da racionalização das estruturas e da adopção e simplificação dos procedimentos de execução e gestão logística preconizados para a implementação da fase final das Bases Gerais do sistema Logístico (BGSLE). Deste modo, após a conclusão dos trabalhos do Sistema Integrado de Informação Logística que engloba a Catalogação, dever-se-á proceder à revisão das BGSLE com o desenvolvimento das seguintes tarefas:

(1) **No âmbito estrutural:**

- Centralizar o processamento das aquisições num órgão directamente subordinado ao General Comandante da Logística;

- Centralizar a armazenagem de equipamentos e abastecimentos no Depósito Geral de Material do Exército (DGMEx), sob a dependência do Centro de Gestão de Logística Geral;
- Proceder ao levantamento das Unidades de Apoio de Serviços de A/D nas Zonas Militares da Madeira e Açores;
- Reanalisar a necessidade de proceder ao levantamento das Unidades de Apoio de Serviços de A/D, previstas para as Regiões Militares do Norte e Sul, tendo em consideração a redução de efectivos e a possibilidade de o apoio às suas Unidades Territoriais ser prestado, directamente, a partir do DGMEx e dos outros Orgãos Logísticos Centrais;
- Reanalisar as missões das Direcções dos Serviços, dada a possibilidade de lhe serem retiradas as tarefas inerentes à gestão das funções logísticas e à aquisição de equipamentos através da eventual passagem para um sistema logístico funcional;

(2) **No âmbito da gestão das actividades logísticas;**

- Implementar os Centros de Gestão Logística Regionais;
- Proceder à simplificação dos fluxos logísticos, através do aperfeiçoamento do circuito preconizado para a fase final de implementação das BGSLE e da adopção de um único fluxo de encaminhamento (materiais críticos e não críticos) para o apoio a Forças Destacadas no exterior;

Trata-se, obviamente, de transformar o actual sistema logístico num sistema mais funcional e simplificado, adequado quer ao apoio logístico ao Sistema de Forças quer à sustentação das Forças Nacionais que, no âmbito da OTAN e da UEO, venham a integrar Forças Multinacionais.

7. CONSTITUIÇÃO MODULAR DE UMA UNIDADE DE APOIO LOGÍSTICO TIPO [12]

A proposta que se segue é um modelo que poderá ser utilizado em termos de raciocínio base, para a constituição das restantes unidades modulares a desenvolver mediante as respectivas adaptações de cariz técnico e de emprego relativamente a cada uma das funções logísticas ou outras

[12] SILVA, Cap SAM Jorge Martins – "A constituição modular das unidades de Reabastecimento e Serviços", CPOS 98/99

actividades em que seja relevante possuir um tratamento específico. Deixamos essas áreas específicas para serem desenvolvidas em estudos decorrentes pelos respectivos especialistas fornecendo de qualquer maneira o que entendemos ser a base conceptual da construção modular de uma unidade com o exemplo que se segue.

a. <u>Unidade de Reabastecimento e Serviços.</u>

Estimamos, no contexto do Exército, que ao preparar uma Unidade de Reabastecimento e Serviços, esta deverá constituir-se como a unidade de apoio às unidades até escalão Brigada, nas funções de Reabastecimento e Serviços de Campanha.

Baseamos a sua organização no conceito de modularidade o que permitirá um emprego flexível e autónomo dos meios. Os módulos base, a definir mais adiante, deverão tender para a normalização e harmonização de procedimentos, dos materiais, dos equipamentos e de meios que facilitem a interoperabilidade e intermutabílidade, projecção, sustentação e substituição dos módulos no TO, sem necessidade de substituir equipamentos.

Pensamos que é possível ter uma prontidão operacional que vai de 24 horas, para o módulo Pelotão, 48 horas para a Companhia e 72 horas para o Agrupamento. Estes prazos contam-se desde o momento em que a unidade logística "geradora" recebe a missão, até ao momento em que o módulo está pronto a actuar em qualquer ponto do TN, ou pronto a embarcar para actuar no exterior.

b. <u>Constituição e Modalidade</u>

Primeiro, são definidos os módulos base para cada actividade, dentro das funções logísticas Reabastecimento e Serviços de Campanha. Depois, consoante as necessidades de apoio, vão-se agregando outros módulos até se atingir a força com a capacidade pretendida. Estes módulos agregados poderão ser de escalão Secção, Pelotão, Companhia ou Agrupamento.

c. <u>Módulo Base</u>

(1) **Reabastecimento das classes I, II, IV, VI e VII**

(a) **Módulo 1:**

- 1 Cabo/Sold Condutor;

- 2 Cabo/Sold Auxiliares de Armazém;
- 1 Viatura pesada;

Capacidade: armazenar e reabastecer até 4 ton em cada fornecimento.

(2) **Reabastecimento da Classe III**

(a) **Módulo 1:**

- 1 Cabo/Soldado Condutor;
- 1 Cabo/Soldado AuxArmzCombLubr;
- 1 Viatura Média;
- 1 Depósito Flexível 500 galões;
- 1 Bomba 50GPM;

Capacidade: Armazenar/reabastecer até 1.800 litros de combustível em cada fornecimento.

Emprego: Armazenar combustível; Atestar viaturas pesadas, ligeiras e jerrycans.

(b) **Módulo 2:**

- 1 Cabo/Soldado Condutor;
- 1 Cabo/Soldado AuxArmzCombLubr;
- 1 Auto Tanque 4.500 litros;

Capacidade: Armazenar/reabastecer até 4.500 litros de combustível em cada fornecimento;

Emprego: Armazenar combustível; Atestar viaturas blindadas; Atestar viaturas pesadas, ligeiras e jerrycans, utilizando um redutor na pistola.

(c) **Módulo 3:**

- 1 Cabo/Soldado Condutor;
- 1 Cabo/Soldado AuxArmzCombLubr;
- 1 Camião Tractor M818 6X6;
- 1 Semi Atrelado 18.000 litros;

Capacidade: Armazenar/reabastecer até 18.000 litros de combustível em cada

fornecimento;

Emprego: Armazenar combustível; Atestar Auto Tanques 4.500 litros; Atestar depósitos flexíveis, Atestar viaturas blindadas; Atestar viaturas pesadas e ligeiras, utilizando um redutor na pistola.

(3) **Serviços de Campanha**

(a) **Módulo de Alimentação**:

- 1 Sargento de Alimentação;
- 1 Cabo Cozinheiro;
- 4 Soldados Cozinheiros;
- 1 Cozinha rodada de campanha;[13]
- 1 Viatura Pesada;

Capacidade e Emprego: Confeccionar 250 refeições quentes ou 500 ultra congeladas, em 2 horas.

(b) **Módulo 1 de Banhos:**

- 1 Cabo/Sold Condutor;
- 2 Cabo/Sold Lavandaria e Banhos;
- 1 Atrelado de banhos de campanha;[14]
- 1 Viatura Pesada;

Capacidade e Emprego: Fornecer 80 banhos/hora, considerando 6 minutos para cada grupo de 8 banhos.

(c) **Módulo 2 de Banhos:**

- 1 Cabo/Sold Condutor;
- 5 Cabo/Sold Lavandaria e Banhos;
- 1 Atrelado de banhos de campanha;[15]
- 1 Viatura Pesada;

[13] Usamos como referência as novas cozinhas rodadas de campanha que estão a ser distribuídas ao Exército: KARCHER NIFK, ARPA 4X150 PK e SERT CR 50OL, todas com características muito semelhantes.
[14] Usamos como referência o Atrelado de Banhos de Campanha SERT RD 3000.
[15] Usamos como referência o Atrelados de Banhos de Campanha M/90 PUJOL

- **Capacidade e Emprego**: Fornecer 360 banhos/hora, considerando 6 minutos para cada grupo de 36 banhos.

(d) **Módulo 3 de Banhos**

- 1 Cabo/Sold Condutor;
- 5 Cabo/Sold Lavadaria e Banhos;
- 1 Camião Tractor M818 6X6;
- 1 Semi Atrelado de Banhos Contentorizado;[16]

Capacidade e Emprego: Fornecer 360 banhos/hora, considerando 6 minutos para cada grupo de 36 banhos.

(e) **Módulo 1 de Lavandaria**

- 1 Cabo/Sold Condutor;
- 5 Cabo/Sold Lavandaria e Banhos;
- 1 Atrelado de lavandaria de campanha;[17]
- 1 Viatura Pesada;

Capacidade e Emprego: Apoia um efectivo de 150 homens[18]; Lava, centrifuga e seca 15kg de roupa por hora.

(f) **Módulo 2 de Lavandaria**

- 1 Cabo/Sold Condutor;
- 5 Cabo/Sold Lavadaria e Banhos;
- 1 Camião Tractor M818 6X6;
- 1 Semi Atrelado de Lavandaria Contentorizado [19]

Capacidade e Emprego: Apoia um efectivo de 1000 homens; Lava, centrifuga e seca 150kg de roupa por hora.

(g)**Módulo 1 de Fabrico de Pão**

- 1 Cabo/Sold Condutor;

[16] Usamos como referência o Semi Atrelado de Banhos Contentorizado
[17] Usamos como referência o Atrelados de Lavandaria de Campanha SERT RLS 2000
[18] Considerou-se aqui o período de uma semana, 7Kg de roupa/homem e 10 horas de trabalho/dia
[19] Usamos como referência o Semi Atrelado de Lavandaria Contentorizado PRESMALTE

- 4 Cabo/Sold Panificação;
- 1 Atrelado Padaria de Campanha;[20]
- 1 Viatura Pesada;
- **Capacidade e Emprego**: Fabrico de pão até 900 pães/50gr/hora.

(h) **Módulo 2 de Fabrico de Pão**

- 1 Cabo/Sold Condutor;
- 5 Cabo/Sold Panificação;
- 1 Camião Tractor M818 6X6;
- 1 Atrelado Padaria de Campanha;[21]
- **Capacidade e Emprego**: Fabrico de pão até 2000 pães/50gr/hora.

(4) **Módulos de Reabastecimento de Água**

Todos os módulos dos Serviços de Campanha necessitam de uma origem de água. Caso ela não exista, serão reforçados com módulos de reabastecimento de água. Estes módulos também podem ser utilizados no âmbito do reabastecimento da classe I-W

(a) **Módulo 1 de Água**

- 1 Cabo/Sold Condutor;
- 1 Viatura média;
- 1 Depósito flexível de 1.500/2.000 litros;
- **Capacidade e Emprego**: Fornecer água até 1.500/2.000litros de água. Não tem capacidade de bombear a água.

(b) **Módulo 2 de Água**

- 1 Cabo/Sold Condutor;
- 1 Autotanque de água de 6.000 litros;
- **Capacidade e Emprego:** Fornecer e bombear água até 1.000 litros de água.

[20] Usamos como referência o Atrelado de Padaria de Campanha SERT RLS 2000
[21] Usamos como referência o Semi Atrelado Padaria de Campanha SERT RLS 2000

d. Módulo Secção

Constituem-se estes módulos agrupando dois, ou mais, módulos base da mesma actividade ou de actividades diferentes. O efectivo destes módulos serão a soma dos módulos base, aumentada de um Sargento para chefiar a secção (excepto no caso do módulo de alimentação em que já existe um sargento no módulo base).

e. Módulo Pelotão

Constituem-se estes módulos agrupando dois, ou mais, módulos de secção da mesma actividade ou de actividades diferentes. Teremos assim constituído Pelotões de Reabastecimento, Pelotões de Serviços de Campanha, ou Pelotões de Reabastecimento e Serviços, consoante as actividades desenvolvidas por esses pelotões.

O efectivo deste pelotão será igual à soma do efectivo das suas secções aumentada de um Oficial Subalterno para o comando do pelotão e do pessoal necessário ao seu apoio.

f. Módulo Companhia

Constituem-se estes módulos agrupando dois, ou mais, módulos de pelotão de actividades diferentes. Teremos assim constituído Companhias de Reabastecimento e Serviços. O efectivo desta companhia será igual à soma do efectivo dos seus pelotões aumentada de um Oficial Capitão para o comando da companhia e do pessoal necessário ao seu apoio.

g. Unidade Logística Territorial (ULT)

Um dos objectivos deste trabalho, já anteriormente referido, é o de permitir uma maior eficiência na utilização dos meios. Isto envolve, necessariamente, todo os meios utilizados, desde o processo de instrução, treino e aprontamento dos módulos.

A dimensão das forças a apoiar, Forças de Projecção (FOP) (ver Anexo F) e Forças de Reserva (FORES)[22], de uma a três Brigadas, não obrigará à existência de substanciais forças de reabastecimento e serviços de campanha. Assim, a unidade com o encargo de preparar estas unidades poderá ser no futuro a "Escola de Logística", estabelecimento a criar com as seguintes responsabilidades e atribuições, entre outras:

[22] António Barrento, General CEME, op. cit., pg. 2 e 3.

- Instrução e aprontamento de unidades de Reabastecimento, Manutenção, Evacuação e Hospitalização, Transportes e Serviços de Campanha.
- A "Escola de Logística" substituirá as Escolas Práticas dos Serviços.

h. <u>Comando das Unidades Logísticas</u>

O Agrupamento de Reabastecimento e Serviços deverá ser comandado por um Tenente Coronel dos Serviços Logísticos.

O Comando deverá ter uma unidade com funções análogas às do actual Destacamento de Comando dos Batalhões de Apoio de Serviços.

i. <u>Instrução e Treino</u>

A projecção da força deve ser planeada e treinada por módulos de emprego, utilizando para tal as potencialidades do território nacional.

O treino da força envolverá sucessivamente uma componente por módulos em exercícios nacionais e em exercícios combinados de âmbito multinacional em que os procedimentos conjuntos e combinados serão treinados em condições, o mais próximas possíveis da realidade do emprego operacional da força. Os exercícios de âmbito nacional para treino desta força deverão ser orientados e reflectir as possíveis missões e cenários de emprego previsíveis.[23]

j. <u>Implicações estruturais</u>

A constituição tipo agora proposta parece-nos coerente com os objectivos a atingir, no entanto para maximizar o seu emprego de uma forma coordenada e integrada com outros módulos a criar na área logística (manutenção, transportes, sanitária, transmissões e engenharia) realça-se a necessidade de criar uma Grande Unidade Logística sediada idealmente junto das melhores infra-estruturas possíveis em termos de mobilidade (transporte) estratégica (aeroportos, portos, ferrovias e rede estradal) por forma a permitir uma efectiva e flexível resposta em tempo oportuno a qualquer solicitação do seu âmbito.

Naturalmente que tal unidade implica investimento em infra-estruturas, meios materiais e humanos (hoje cada vez mais escassos), mas tal parece-nos perfeitamente justificável face ao

[23] Jocelino Rodrigues (Major), op. cit., pg. 34

aumento, fundamentalmente da eficácia e prontidão de resposta que tal integração permitirá.

8. PROPOSTAS E CONCLUSÃO

a. Generalidades

A diminuição de um risco visível de ameaça, provocado pelo fim da guerra fria fez aumentar as pressões para se efectuarem reduções nos gastos governamentais com a defesa.

A nova tipologia de conflitos caracterizado por factores de índole étnica, cultural, religiosa exige forças mais flexíveis para fazer face a estas novas ameaças.

O novo papel que as organizações internacionais têm assumido na defesa do direito internacional e na tentativa de resolução de conflitos internos exige forças de fácil projecção para o exterior do território nacional.

Nas missões actuais, as funções logísticas, Reabastecimento, Transporte, Manutenção, Hospitalização e Evacuação e Serviços de Campanha assumem primordial importância no apoio a prestar, em que para além da necessidade de apoiar convenientemente as forças destacadas, importa também não esquecer a importância que actualmente é dada, cada vez mais, ao moral e bem-estar das tropas e mesmo das populações existentes no TO.

Assim é necessário que esse apoio seja feito em perfeita integração com a manobra táctica.

A modularidade será o caminho a seguir para se desenharem as forças que prestarão o apoio logístico, capazes de serem simultaneamente eficientes no emprego dos meios, flexíveis no acompanhamento e no evoluir da situação e eficazes no apoio da força.

Mas para a criação da tal modularidade, parece-nos ser condição preferencial a criação prévia de uma Unidade de Apoio Logístico do tipo Unidade Logística Territorial (ULT) que concentre em si, os meios humanos e materiais necessários, para facilitar o atingir dos objectivos de flexibilidade e eficiência pretendidos.

b. Propostas

Face ao exposto neste estudo, apresentamos três modalidades de acção que têm por base, o cumprir dos objectivos apresentados no ponto anterior e levando em linha de conta as orientações descritas na DPF/CEMGFA/99, na Informação nº 342/ROM/98 do Estado Maior do

Exército (EME) na Directiva nº 2/VC/99 no que respeita à colaboração nos estudos sobre a Componente Operacional do Sistema de Forças Nacional (COSFN).

(1) **Pressupostos**

As modalidades de acção a seguir apresentadas, visam assegurar o apoio logístico necessário à componente territorial e operacional do Exército, nomeadamente, no apoio às Forças de Projecção do Exército (FOP). As restantes unidades logísticas da componente territorial ficam com a responsabilidade de apoio às Forças de Reserva (FORES) e outras a formar por mobilização.

As modalidades apresentadas asseguram a necessidade de rotação das forças em três períodos distintos ou simultâneos em conjugação com as unidades de apoio logístico existentes quer na componente territorial quer na BMI e BAI através dos seus Batalhões de Apoio de Serviços (BApSvc):

- Seis meses para a preparação da componente apoio logístico;
- Seis meses de intervenção na operação;
- Seis meses para a componente de apoio logístico em reserva (emprego à ordem);

(2) **Modalidade A:**

Criação de uma Unidade Logística Territorial de constituição modular com a possibilidade de comportar todas as funções de actuação logística através da seguinte constituição:

- **Destacamento Logístico de Reacção Imediata** (DLRI) — a 1 Companhia de Reabastecimento e Transportes, 1 Pelotão de Manutenção Ligeira e 1 Hospital Cirúrgico Móvel (HCM), parte integrante da FCRI – Cat. 2;
- **Agrupamento Logístico de Reacção Rápida** (ALRR), a 2 Companhias de Reabastecimento e Serviços (CReabSvc), 1 Companhia de Transportes (CTransp), 2 Companhia de Manutenção Ligeira (CManLig), 1 Companhia Sanitária (CSan), 1 Companhia de Infra-estruturas e Apoio de Engenharia (CIApEng) e 1 Companhia de Comunicações e Gestão de Informação (CComGI)

- **Localização**: região de BENAVENTE – ALCOCHETE. Vantagens em termos operacionais face às infra-estruturas aeroportuárias e portuárias existentes na região que permitem deslocar o apoio necessário da forma mais rápida e oportuna, assim se adquiram os meios que possibilitem possuir a mobilidade estratégica necessária às operações.

(a) **Vantagens da modalidade A**

Quando pronta, será capaz de uma grande e flexível capacidade de resposta logística em tempo oportuno a qualquer solicitação ou operação de contingência face à existência na região referida do Depósito Geral de Material do Exército (BENAVENTE) onde grande parte dos reabastecimentos necessários estarão concentrados e ainda através da proximidade das cidades de Lisboa e Setúbal para satisfação doutras necessidades, além de ainda poder adaptar os seus meios modulares de uma forma multifuncional consoante as necessidades MITM-T existentes no TO, obtendo-se assim uma maior economia de escala e flexibilidade no emprego da força sempre desejável face à escassez de meios disponíveis. De realçar a possibilidade de os módulos restantes ficarem aptos a desempenhar outras missões distintas que entretanto sejam atribuidas sem qualquer perda de rendimento, característica própria da modularidade.

(b) **Inconvenientes da modalidade A:**

O grande inconveniente desta modalidade é o tempo necessário para a sua criação de raiz, a necessidade de obter mais quadros e ainda de se efectuar um investimento considerável em termos financeiros que permita a construção das infra-estruturas necessárias e o apetrechamento em meios materiais e em formação dos meios humanos para se obter essa Grande Unidade Logística (ULT). Esta modalidade encontra-se também seriamente dependente de um investimento paralelo que terá de ser efectuado nos vectores da mobilidade estratégica (meios aéreos e navais, fundamentalmente) sem o qual, poderá ser posta em causa todo o potencial em termos de oportunidade de resposta, flexibilidade e eficiência que esta unidade possa vir a possuir, pois estará sempre

seriamente dependente destes meios, face às missões tipo existentes hoje em dia nos conflitos e crises internacionais. Também a área do fluxo, processamento e gestão da informação e dados logísticos requer um empenhamento acentuado.

(3) **Modalidade B:**

Criação de uma Unidade Logística Territorial baseada em componentes de unidades logísticas já existentes, adaptando-as à constituição modular com a possibilidade de comportar todas as funções de actuação logística através de:

- **Destacamento Logístico de Reacção Imediata** (DLRI) — a 1 Companhia de Reabastecimento e Transportes (EPAM/EPST), 1 Pelotão de Manutenção Ligeira (EPSM), e 1 Hospital Cirúrgico Móvel (HCM) (ESS), parte integrante da FCRI;
- **Agrupamento Logístico de Reacção Rápida** (ALRR), a 2 Companhias de Reabastecimento e Serviços (CReabSvc) (BApSvc da BMI, BAI, BLI e EPAM), 1 Companhia de Transportes (CTransp) (BST), 2 Companhia de Manutenção Ligeira (CManLig) (BApSvc da BMI, BAI, BLI e EPSM), 1 Companhia Sanitária (CSan) (ESS/DSS), 1 Companhia de Infra-estruturas e Apoio de Engenharia (CIApEng) (EPE) e 1 Companhia de Comunicações e Gestão de Informação (CComGI) (EPT).
- **Localização**: região de BENAVENTE – ALCOCHETE. Vantagens em termos operacionais face às infra-estruturas aeroportuárias e portuárias existentes na região que permitem projectar o apoio necessário da forma mais rápida e oportuna, assim se adquiram os meios que possibilitem possuir a mobilidade estratégica necessária às operações.

(a) **Vantagens da modalidade B:**

Possuir de início unidades com experiência e aptidões técnicas que se traduzem em mais valias que facilitam a transição para a modularidade.

Possibilidade de uma limitada mas flexível capacidade de resposta logística inicial imediata face a qualquer solicitação ou operação de contingência devido à existência na zona do Depósito geral de Material do Exército (BENAVENTE) onde grande parte dos

abastecimentos necessários estarão concentrados e ainda da proximidade da cidade de Lisboa. Pode ainda adaptar os seus limitados meios modulares de uma forma unifuncional ou multifuncional consoante as necessidades MITM-T existentes obtendo-se assim uma maior economia e rentabilidade no emprego da força sempre desejável face à escassez de meios disponíveis. A constituição dessa Unidade Logística Territorial (ULT) de cariz modular baseada em unidades logísticas já existentes tem as vantagens inerentes de o treino básico de emprego estar efectuado e de estas estarem já equipadas com os equipamentos necessários à execução das suas funções requerendo apenas algum treino conjunto específico.

(b) **Inconvenientes da modalidade B:**

O maior inconveniente desta modalidade é ainda, a necessidade de se efectuar um investimento de alguma monta em termos financeiros (menor que na modalidade A) que permita a criação/obtenção das infra-estruturas necessárias à efectivação dessa Grande Unidade Logística. Outro dos inconvenientes é a necessidade de deslocar parte das unidades logísticas constituídas para a ULT o que poderá afectar momentaneamente a eficiência das unidades donde são oriundas, podendo no entanto aproveitar o momento para efectuar a restruturação necessária à sua própria constituição modular que idealmente se pretende, sem nunca deixar de assegurar, a continuidade do apoio logístico que a essas unidades estão atribuídos. Também esta modalidade depende seriamente do investimento paralelo que se faça nos vectores de transporte estratégico (meios aéreos e navais, fundamentalmente) sem o qual poderá ser posto em causa toda a eficácia e eficiência que esta unidade possa vir a possuir, visto estar sempre seriamente dependente destes meios de transporte para fazer face à tipologia das missões existentes hoje em dia nos conflitos e crises internacionais.

(4) **Modalidade C:**

Criação de várias Unidades Logísticas de constituição modular dispersas pelas unidades territoriais existentes no País de nível companhia com a possibilidade de comportar

todas as funções de actuação logística através de:

- **Destacamento Logístico de Reacção Imediata** (DLRI) — a 1 Companhia de Reabastecimento e Transportes (EPAM/EPST), 1 Pelotão de Manutenção Ligeira (EPSM) e 1 Hospital Cirúrgico Móvel (HCM) (ESS), integrante da FCRI.
- **Agrupamento Logístico de Reacção Rápida** (ALRR), a 2 Companhias de Reabastecimento e Serviços (CReabSvc) (BApSvc da BMI, BAI, BLI e EPAM), 1 Companhia de Transportes (CTransp) (BST), 2 Companhias de Manutenção Ligeira (CManLig) (BApSvc da BMI, BAI, BLI e EPSM), 1 Companhia Sanitária (CSan) (ESS/DSS), 1 Companhia de Infra-estruturas e Apoio de Engenharia (CIApEng) (EPE) e 1 Companhia de Comunicações e Gestão de Informação (CComGI) (EPT).

- **Localização**: Dispersas pelas várias unidades territoriais do País.

(a) **Vantagens da modalidade C:**

Encargos financeiros de implementação da constituição modular mínimos.

(b) **Inconvenientes da modalidade C:**

Dificuldades nas acções de comando e controlo face à dispersão das unidades.

A dispersão dos módulos criados provoca uma grande ineficiência caso seja necessário actuar em estados de prontidão elevados. A falta de integração física num único local provocará uma diminuição da eficiência das acções dos vários módulos que deveriam actuar de uma forma integrada e até multifuncional se as condições MITM-T assim o exigirem. A execução de exercícios periódicos poderá minimizar as deficiências de coordenação entre os vários módulos, no entanto, esta situação envolve também custos de execução com resultados pouco eficazes para elevados graus de prontidão.

c. <u>Proposta e conclusões.</u>

A modalidade a escolher seria a da criação de raiz de uma Unidade Logística Territorial semelhante à CONUS dos EUA de constituição modular multifuncional tal como nos referimos na nossa modalidade A. Mas a nossa realidade é bem distinta e esta, não se

coaduna com pensamentos tão abrangentes ainda que desejáveis, assim a nossa proposta recai sobre a modalidade B pois parece-nos ser aquela que melhor pode potenciar as áreas que consideramos essenciais nesta análise, o aumento da eficiência do estado de prontidão, da economia de escala e da flexibilidade tão necessária face aos diversificados cenários com que nos deparamos nos dias de hoje. Três factores basearam a nossa escolha:

O primeiro factor foi o da economia de meios pelo facto de estamos a utilizar meios humanos e materiais já existentes nas unidades existentes no TN, existindo apenas a necessidade de criar infra-estruturas no local proposto que dêem condições de vida às forças que aí serão colocadas.

O segundo factor parece-nos ser da maior importância face à evolução dos tempos, ou seja, a necessidade de aumentar a rapidez e a flexibilidade de emprego dos meios tendo em vista obter a maior rentabilização dos mesmos com os menores custos possíveis, e tal só se poderá alcançar com a concentração dos mesmos num local que seja servido das melhores infra-estruturas de apoio em mobilidade estratégica por forma a aumentar a eficiência da execução dos apoios necessários. Não nos devemos esquecer que esta nova metodologia implica, como já referimos, que todo um sistema integrado de processamento de dados informático esteja disponível para facultar a tomada de decisões, com oportunidade, através dos dados necessários, idealmente em tempo real ou no mínimo, o mais actuais possível.

O terceiro factor é o do impacto positivo que uma Grande Unidade Logística (ULT), com as características e no local proposto, poderá ter para concorrer para que a imagem do Exército fique ainda mais favorecida face à opinião pública Nacional podendo assim contribuir, a par das unidades de manobra e de apoio de combate, para a cativação cada vez mais necessária, face à implementação da recém aprovada LSM, dos jovens para entrarem nas fileiras, face à perspectiva de, devido ao seu espírito aventureiro, poderem vir a actuar no estrangeiro em missões que os podem prestigiar a eles e ao País, contribuindo assim para preencher os já desfalcados quadros existentes actualmente, área que se percebe vir a ser de primordial importância num futuro muito próximo para o Exército.

Para concluir o nosso trabalho gostaríamos de referir que a implementação da modularidade ao nível das unidades de apoio logístico é não só viável como necessária e fundamental para o efectivo aumento da prontidão da resposta às solicitações logísticas actuais além de permitir uma maior flexibilização do emprego dos, sempre escassos, meios disponíveis, mas tal, implicará, provavelmente um investimento maior na formação complementar de quadros para que as suas especialidades se enquadrem e respondam às características da constituição modular (e.g. Serviços de Transporte) bem como na disponibilização dos meios para a constituição dessas unidades o que, poderá induzir nos menos informados a sensação de alguma redundância por multiplicação da disponibilização de meios humanos e materiais próprios da criação de unidades modulares no entanto imprescindíveis para funcionarem com a prontidão e eficiência pretendida.

Realçamos ainda que as áreas de Pessoal e Finanças não foram consideradas ao mesmo nível neste estudo visto entendermos que a premência da sua utilização em termos de prontidão o não justificava, no entanto ela terá de ser considerada e analisada no âmbito do apoio logístico mais abrangente a efectuar.

Terminamos este trabalho chamando à atenção para a análise a efectuar aos Anexos G, H, I, J onde são apresentadas novas formas de emprego das funções logísticas face ao novo ambiente de conflitualidade internacional realçando ainda um possível quadro de necessidades de mobilidade estratégica naval para missões deste tipo no Anexo L.

Como consideração final, diremos que o apoio logístico que se adivinha, será cada vez mais especializado, de tendência modular, normalizado, multinacional, com meios cada vez mais interoperáveis e intermutáveis, complementados pelas mais modernas tecnologias de gestão de informação e comunicação, requerendo uma flexibilidade e mobilidade estratégica exponencial e uma capacidade de auto-sustentação das forças cada vez maior com a utilização de equipamentos que requerem cada vez menos manutenção e de grande fiabilidade e capacidade. O Sistema Logístico Nacional terá assim forçosamente de se readaptar. Para tal, há que tomar as decisões políticas inerentes a esta evolução...

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LISTA DE ANEXOS

ANEXO A

CONCENTRAÇÃO EM TEMPO DE PAZ DAS UNIDADES DE APOIO LOGÍSTICO DA COMPONENTE OPERACIONAL NOS ÓRGÃOS DE APOIO LOGÍSTICO DE BASE. Vantagens e Inconvenientes

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1. Introdução

A finalidade do presente trabalho é reflectir sobre as vantagens e inconvenientes de uma eventual concentração, em tempo de paz, das Unidades de Apoio Logístico da Componente Operacional, nos órgãos de Apoio Logístico de Base.

Na abordagem do Tema foi seguida a metodologia que se aduz: analisar a realidade actual do apoio logístico às várias unidades da componente operacional, com unidades específicas orgânicas ou a atribuir; levantar diversas modalidades de acção que sirvam o propósito da concentração das unidades de apoio logístico da componente operacional, em tempo de paz, apontando vantagens e inconvenientes, por fim, extrair conclusões desta reflexão.

Subjacente a este raciocínio, permanece o entendimento de que compete à Logística, «Prever e prover as necessidades das tropas, designadamente em operações», assim como se mantém o respeito pela observância dos Princípios Logísticos, isto é, Subordinação à Manobra Operacional, Unidade de Comando, Simplicidade, Previsão, Economia e Flexibilidade.

De referir, ainda, que se elegeram como pressupostos a necessidade de qualquer das modalidades de acção a considerar garantir a transição de uma situação de paz para crise ou guerra, permitir o apoio a Forças Nacionais Destacadas, em tempo de paz, em acções de política externa do Estado e, também, responder a necessidades de apoio no âmbito das missões de interesse público, designadamente em situações de calamidade.

Conquanto, em termos organizacionais, cada Brigada Independente deva dispor de um Batalhão de Apoio de Serviços e, sem pôr em causa este objectivo desejável, mas tendo em conta que os recursos tornados disponíveis, quer financeiros quer em pessoal e material tomam difícil a sua concretização, justifica-se que se racionalizem esses mesmos recursos e seja possível dar resposta a eventuais necessidades operacionais. Não se procura, assim, alterar a doutrina, mas sim encontrar as soluções mais adequadas tendo em atenção a realidade actual.

2. O Apoio Logístico, da componente operacional, em tempo de paz.

A análise das possíveis vantagens e inconvenientes do conceito de «concentração» implica, em primeiro lugar, tomar claro o que é possível concentrar face à realidade actual, que condições existem para rendibilizar recursos e até que ponto o «gerar módulos», constitui solução inovadora, em todo este processo.

- A componente operacional do Sistema de Forças tem a seguinte configuração:

- COFT — Comando do 1 CE
- Comando Administrativo-Logístico (CAL), a fornecer pelo QG/GML, constituído por 1 CGM e 1 CCM (em OB), 1 CReabSvc da EPAM/BAM, 1 BSan(-) do BSS, com a UCM, 1 CTransp do BST e 1 CManLig da EPSM.
- BMI com 1 BApSvc orgânico.
- BAI com 1 BApSvc, em processo de levantamento.
- BLI com 1 BApSvc (Cmd e DestacCmd (-) e CRT (-) da EPAM/BAM e CSan do BSS).
- Brigadas de Defesa Territorial, Norte, Centro e Sul e Agrupamentos de Defesa Territorial dos Açores e Madeira, todos a levantar por mobilização.

Como órgãos de Apoio Logístico de Base e Apoio Geral à componente operacional, dispomos de quatro Estabelecimentos Fabris (OGFE, OGME, LMPQF e MM), de cinco Depósitos (DGME, DGMI, DGMG, DGMS e DGMTm), de seis Estabelecimentos Hospitalares e de quatro Unidades de Apoio Geral (EPSM/BSM, EPAM/BAM, BSS com a UCM e o BST).

0 COFT é o Comando subordinado do CEME para a execução das tarefas operacionais e administrativo-logísticas, em apoio da componente operacional do Sistema de Forças Nacional, na vertente do Exército; para aquelas últimas disporá do CAL, ao qual serão atribuídas Unidades, em tipo e em número, adequadas ao apoio a prestar.

Este racional encontra suporte nas Bases Gerais do Sistema Logístico que aponta para um sistema de apoio misto -Funcional, nos baixos escalões e, por Serviços, nos escalões mais elevados, tendo em vista um melhor aproveitamento dos recursos disponíveis; nesta perspectiva orgãos de apoio geral, em função da sua localização territorial, são chamados a prestar igualmente apoio directo.

A solução adoptada traduz, já em si, uma rendibilização dos recursos disponíveis, porquanto a lógica da atribuição de encargos operacionais a unidades de apoio geral, com destino a unidades da componente operacional, corresponde a uma opção de não atribuição daquelas, em permanência, à unidade operacional; por outro lado, uma atitude diferenciada em relação às três Brigadas materializa o reconhecimento de que essa solução não pode ser geral e deve ter em conta a especificidade de cada uma daquelas grandes unidades.

Assim, a BMI dispõe do BApSvc orgânico, o que se explica pelo carácter das exigências de apoio a uma grande unidade mecanizada e pelo número de unidades concentradas no mesmo Campo Militar; relativamente à BAI, valências logísticas ligadas ao carácter aero-transportado e ao lançamento aéreo de cargas, não podem deixar de lhe ser atribuídas em permanência, como na realidade acontece, enquanto outras, podem ser reduzidas ou não atribuídas face à sua dispersão por dois núcleos, pois em tempo de paz é possível serem asseguradas pela estrutura territorial; quanto à BLI, o seu carácter disperso possibilita aceitar a solução adoptada, o seu BApSvc: provém do encargo operacional de unidades logísticas de apoio geral.

O conceito de módulos, para a estruturação das unidades de apoio logístico, já estava presente nas Bases Gerais do Sistema Logístico, quando se aponta que o módulo-base, para o levantamento das unidades de apoio do CAL é o pelotão «face a necessidades específicas de determinado tipo de apoio vão-se levantando pelotões de Reabastecimento, Manutenção, Transporte, Sanitário e de Serviços, nas proporções e quantitativos convenientes. Estes pelotões irão constituir companhias, estas constituirão batalhões, que por sua vez darão origem a agrupamentos. As companhias poderão ser formadas por pelotões do mesmo tipo ou de tipos diferentes, de acordo com o apoio a prestar». Como se indicou atrás, o levantamento do CAL obedece a esta filosofia.

Também o apoio a Forças Nacionais Destacadas, em acções de política externa do Estado, segue esta linha, quer pela sua organização vocacionada para uma missão específica, quer pela atribuição de responsabilidades às unidades de apoio geral no âmbito dos encargos operacionais atribuídos, de «integrarem, à ordem, o *Rear Support Group*» dessas forças destacadas.

Foi assim que se constituiu o «National Support Element - NSE», que acompanhou inicialmente o primeiro Batalhão Português que integrou a IFOR, na Bósnia-Herzegovina, garantindo o seu apoio logístico; igualmente se desencadeou envio de Equipas de Contacto, aquando das sucessivas rendições.

Esta estrutura tem, de igual modo, respondido às exigências de apoio no domínio das missões de interesse público, em situações de calamidade, actuando as unidades operacionais e de apoio logístico, de acordo com as responsabilidades atribuídas pelos Planos que visam aquelas situações (PLANOS «LIRA» e «ALUVIÃO»)

É legítimo referir-se, também, que esta estrutura não põe em causa a doutrina organizacional que nos serve de referência e que aquilo que vem determinando sucessivos ajustamentos estruturais é a procura da optimização e rendibilização dos parcos recursos disponíveis.

Na conjuntura internacional actual, em que as Forças Armadas deixaram de se orientar, em termos estratégicos e de organização, para fazerem face a uma ameaça caracterizada, privilegiando a sua aptidão para reunirem e operarem capacidades diversificadas, toma-se sugestivo reflectir sobre modelos que, no Exército, tirando partido da agregação de módulos, confiram flexibilidade, poupem efectivos e propiciem sinergias. Esta preocupação esteve patente nas palavras do General CEME que, na sua intervenção aquando do Seminário «Força Terrestre no Século XXI», realizado no IAEM em Novembro de 1997, referiu: «Há tendência crescente para cada unidade ter um apoio imediato mínimo, ficando para formações de serviços especializados o apoio geral ou de área. A necessidade de efectivos cada vez mais reduzidos impõe que muitas das funções logísticas de apoio sejam entregues a formações polivalentes».

3. **Modalidades de acção que sirvam o conceito da concentração.**

Tendo em vista a actual conjuntura estratégica, as tendências que vêm sendo sugeridas ou apresentadas, os pressupostos admitidos, a necessidade de se gerir, com eficácia, os escassos recursos tornados disponíveis e seguindo a metodologia indicada elegeram-se diversas modalidades de acção, que a seguir se analisam

Uma Primeira Modalidade de Acção corresponde à opção de retirar os BApSvc das Brigadas Independentes (BMI, BAI e BLI) concentrando, em tempo de paz, nos órgãos de Apoio Logístico de Base o apoio da componente operacional.

Assume-se, assim, que competirá às unidades logísticas de apoio geral garantir esse apoio e a responsabilidade de gerar os necessários «Módulos de Apoio», de escalão pelotão, nas várias áreas funcionais, de acordo com a sua vocação logística - o de Transporte no BST, o Sanitário no BSS (incluindo a UCM), o de Manutenção na EPSM/BSM e o de Reabastecimento e Serviços na EPAM/BAM. Aos demais orgãos de Apoio de Base (Estabelecimentos Fabris, Depósitos e Oficinas Gerais) caberá o fornecimento, àquelas Unidades de Apoio Geral, das valências técnicas do seu âmbito específico.

Quanto às funções Pessoal e Finanças, uma de duas opções poderá ser encarada: constituir, junto das Brigadas, um núcleo permanente da CAdm com aquelas valências, ou atribuir a responsabilidade do levantamento destes «Módulos» a uma unidade de implantação territorial, designadamente a

EPAM/BAM ou, eventualmente, o Batalhão de Adidos, este se vocacionando para as antigas funções do BSGE, (actualmente aquela unidade tem a dependência funcional do CMDINST).
Esta solução permitiria ainda atribuir, em permanência, aos Orgãos de Apoio de Base e Geral, módulos de Transporte e Reabastecimento para as Classes I, III, V e VI, o que corresponderia ao conceito de fornecimento na Unidade.

Como grande princípio, estes módulos seriam a base de constituição do BApSvc das Brigadas e das unidades que pertencem ao CAL, fazendo assim a transição de tempo de paz para as situações de crise ou de guerra.

Esta modalidade tem as seguintes VANTAGENS:
- Favorece a economia de recursos, humanos, financeiros e materiais (infraestruturas e equipamentos);
- Confere flexibilidade na constituição, articulação e aptidão técnica dos «módulos de apoio»;
- Garante maior facilidade e rapidez de resposta a exigências específicas de apoio e à constituição de Equipas de Contacto.

Como INCONVENIENTES apontam-se os seguintes:
- Altera a actual filosofia de apoio à BMI, o que não favorece a coesão e a operacionalidade da unidade;
- Toma mais difícil o treino com a unidade operacional;
- Afecta a unidade de comando e a coesão e espírito de unidade;
- Introduz maiores dificuldades na transição da situação de paz, para crise ou guerra, inclusive na prática dos procedimentos a utilizar nessas situações;
- Exige ajustamentos no Exército de carácter estrutural.

Uma Segunda Modalidade de Acção mantém a actual existência e situação do BApSvc da BMI e segue o conceito de concentração das unidades de apoio logístico da BAI e BLI nas unidades de Apoio de Base, com a aptidão destas para gerar módulos nas várias funções logísticas, como se indicou na Primeira Modalidade.

Esta Segunda Modalidade de acção, tem como VANTAGENS:
- Salvaguarda a especificidade do apoio logístico à BMI;
- Mantém as referidas para a primeira modalidade de acção.

Apresenta como INCONVENIENTES os seguintes:
- Cria dois modelos diferenciados de apoio logístico às Brigadas da componente operacional;
- Reduz os eventuais benefícios de uma política de concentração;
- Mantém, embora apenas significativamente para a BAI, os inconvenientes referidos para primeira modalidade.

Por último, embora fugindo ligeiramente ao tema proposto mas mantendo o conceito de concentração, em tempo de paz, das unidades de apoio logístico da componente operacional, considerou-se uma Terceira Modalidade de Acção, com duas variantes:

A variante A - que corresponde ao levantamento de uma Grande Unidade Logística capaz de apoiar as três Brigadas, gerar os módulos necessários à transição para situações de crise ou de guerra, fazer o apoio a Forças Nacionais Destacadas, e, ainda, responder a situações de calamidade pública; e a variante B - que corresponde a fazer o levantamento dessa Grande Unidade, a partir do BApSvc orgânico da BMI.

A variante A, apresenta como VANTAGENS:
- Confere melhor capacidade de apoio logístico ao Comandante Operacional do Exército;
- Facilita a adequação das manobras táctica e logística;
- Melhora as condições para o treino técnico nas diversas valências logísticas;
- Vocaciona os Orgãos de Base apenas para o apoio geral;
- Flexibiliza o levantamento e dimensionamento de módulos logísticos;
- Permite fomentar o espírito de unidade e vocacionar o apoio para as exigências da actividade operacional.

Como INCONVENIENTES apontam-se os seguintes:
- Os inerentes ao levantamento de uma Grande Unidade, num ambiente marcado por redução e concentração de unidades (pessoal, infra-estruturas e implicações financeiras);
- As implicações já referidas, de carácter negativo, para a BMI;
- Corresponde a tratar, do ponto de vista doutrinário, as Brigadas como não independentes, em termos logísticos, com as consequentes implicações estruturais;

- Atribui ao comandante operacional, as responsabilidades inerentes ao planeamento, gestão, execução e controlo do apoio logístico.

A variante B apresenta como VANTAGENS:
- Atenua as implicações negativas apontadas para a BMI;
- Potencia as capacidades do Campo Militar de Santa Margarida, tira partido da experiência de um apoio vocacionado para uma grande unidade operacional e pode criar condições, neste âmbito, para um apoio logístico orientado para o polígono militar Santa Margarida Tancos - Entroncamento;
- As referidas para a variante A.

Como INCONVENIENTES apontam-se seguintes:
- O referido para a variante A, com excepção do que se aplica à BMI.

Comparadas vantagens e inconvenientes das várias modalidades de acção consideradas, não se evidencia significativa melhoria do apoio logístico, decorrente da concentração das unidades logísticas da componente operacional; à eventual economia de recursos, contrapõem-se significativos prejuízos para a BMI, quer no domínio do apoio quer eventualmente da sua operacionalidade.

Contudo ressaltam como mais gravosos, a necessidade de ajustamentos estruturais a efectuar pelo Exército e um processo mais complexo na transição de tempo de paz para tempo de crise ou de guerra.

Por último, o GT considera pertinente apontar mais as seguintes reflexões conclusivas, decorrentes não só das duas primeiras modalidades de acção, como igualmente da terceira, embora esta tenha os condicionalismos que a tempo se referiram.

4. Conclusões

Da reflexão efectuada, é parecer do Grupo de Trabalho que «modalidades de acção de apoio logístico» visando racionalizar recursos, não devem comprometer soluções que, apesar das dificuldades conhecidas, possibilitaram, simultaneamente, garantir a coerência organizacional e a operacionalidade do Sistema de Forças. Parece-nos, assim, que uma eventual concentração das unidades logísticas da componente operacional, em tempo de paz, não deverá incluir o BApSvc da BMI.

Fica-nos igualmente a dúvida relativamente ao «produto obtido», em termos de aumento da capacidade de apoio logístico à componente operacional, pela concentração, dos meios que na realidade existem e a ampliação dessa capacidade, pela constituição de «módulos», os quais terão, necessariamente, de se obter por mobilização e, ou, recrutamento, situação que já acontece na actualidade.

Por outro lado, ao admitir-se que a concretização do conceito de «concentração» não se deverá aplicar à BMI, uma solução intermédia poderá passar pelo redimensionamento do BApSvc da BAI, ajustando-o às efectivas necessidades logísticas desta unidade; quanto à BLI, desde que os encargos operacionais atribuídos à EPAM/BAM e BSS sejam criteriosamente levantados, não há razão para se alterar o procedimento actual.

No mesmo sentido, julga-se ser mais importante e urgente credibilizar a actual estrutura pela seguinte ordem de prioridades: racionalizar as valências logísticas, a estrutura e a dimensão das sub-unidades dos actuais BApSvc; ter idêntico procedimento relativamente aos actuais encargos operacionais no âmbito logístico e garantir a sua existência; optimizar o relacionamento e o aproveitamento de estruturas da sociedade civil passíveis de fornecerem apoio logístico ao Exército.

Se retomarmos o conceito de que «cada unidade operacional deve dispor de apoio imediato mínimo», parece-nos que deveria procurar manter-se uma unidade Logística de escalão batalhão em cada brigada, não dispensando essa intenção todo o esforço de racionalização de recursos que a situação actual implica.

Por último não pode deixar de se ter em consideração as implicações decorrentes da reduzida dimensão do território nacional, situação que, em termos de profundidade, leva a que a Área de Retaguarda do CE nacional, se possa confundir ou quase sobrepor com a Zona de Comunicações ou a Zona de Interior.

Esta situação, acrescida do referido no parágrafo anterior e do conceito de «formações de apoio logístico geral polivalentes», aponta para que o A/G ao CE, no TN possa ser directamente prestado a partir de órgãos logísticos de base ou de A/G e dispense a implantação deste tipo de unidades, na área da retaguarda do CE, sejam do CAL ou uma grande unidade logística, hipótese que mereceria uma reflexão aprofundada.

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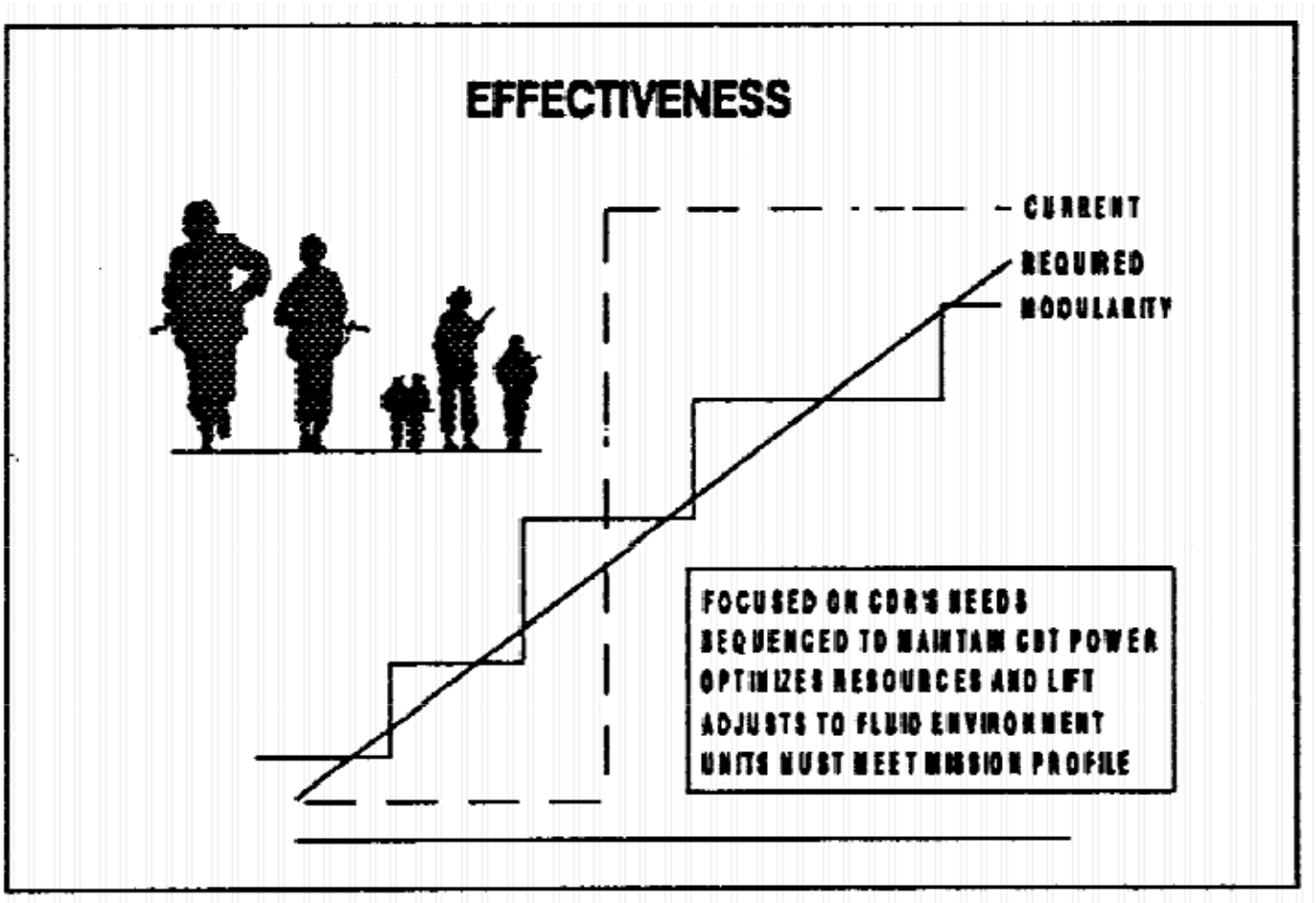
ANEXO C 1 Plano de Forças 1 EME de 13 de Fevereiro de 1997
DIRECTIVA 1671 CEME 97 de 02 de Maio de 1997
DIRECTIVA 1781 CEME 97 de 19 de Maio de 1997
Seminário «A FORÇA TERRESTRE NO SÉCULO XX1 ", IAEM Nov 1997, intervenção do Gen CEME
Intervenção no IAEM do Gen QMG, 18 de Março de 1998

ANEXO B

GRÁFICO COMPARATIVO SOBRE A EFICIÊNCIA DA MODULARIDADE

Como se pode observar neste gráfico, a modularidade tende a diminuir as discrepâncias que hoje se verificam entre a necessidade de apoio e a que é efectivamente prestada quando é necessário prestar ou reforçar o apoio a uma determinada força.

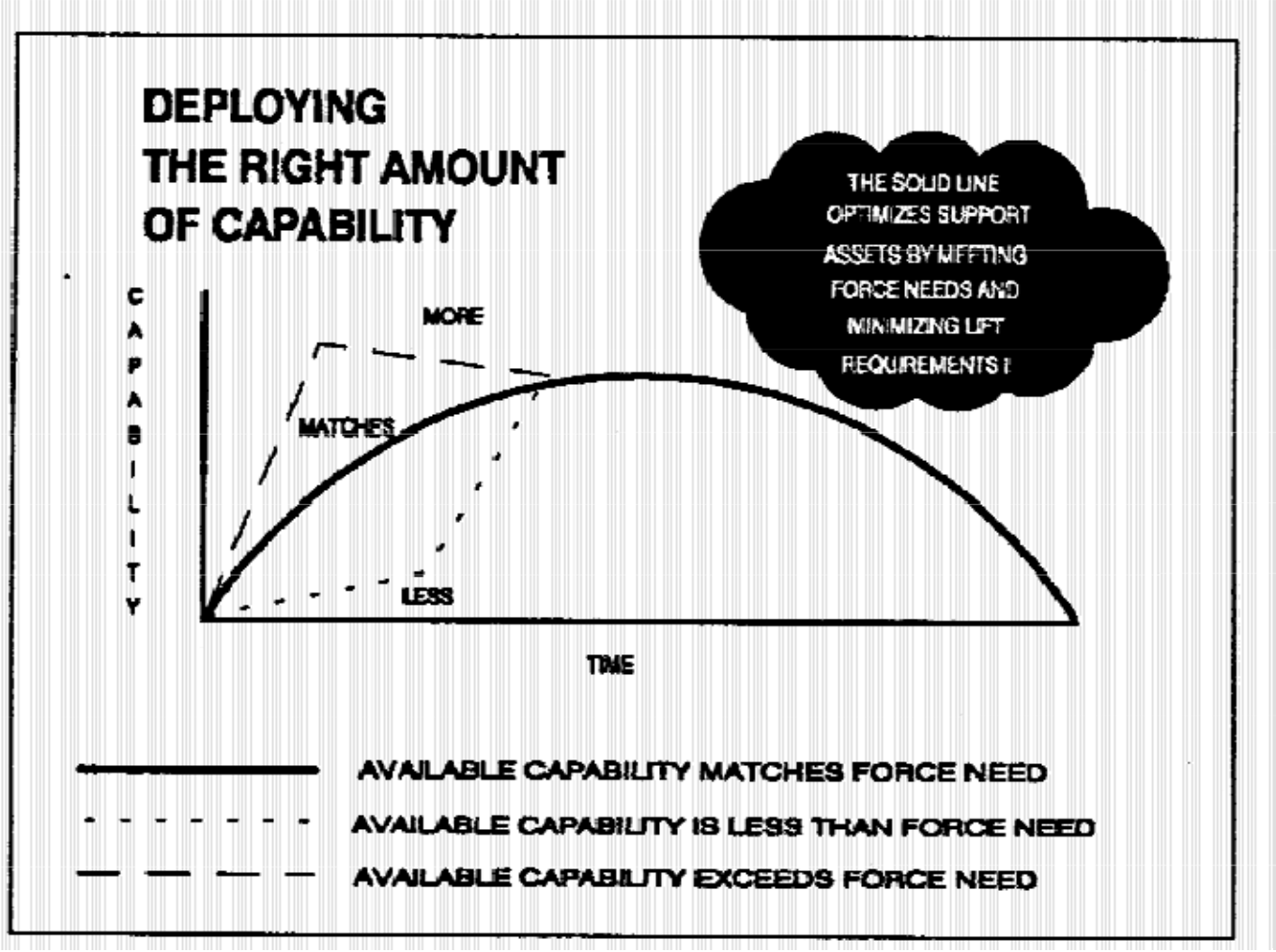
Essa nova técnica de apoio é mais visível nas satisfação das necessidades de Comando e Controlo, conseguindo assim, assegurar uma melhor capacidade do Comandante em comandar efectivamente a sua força, optimizando e adaptando melhor, ao mesmo tempo, os recursos disponibilizados e o seu respectivo transporte, num ambiente altamente fluído e instável a que as novas missões estão submetidas.



ANEXO C

GRÁFICO DO TRANSPORTE E MOBILIDADE ESTRATÉGICA

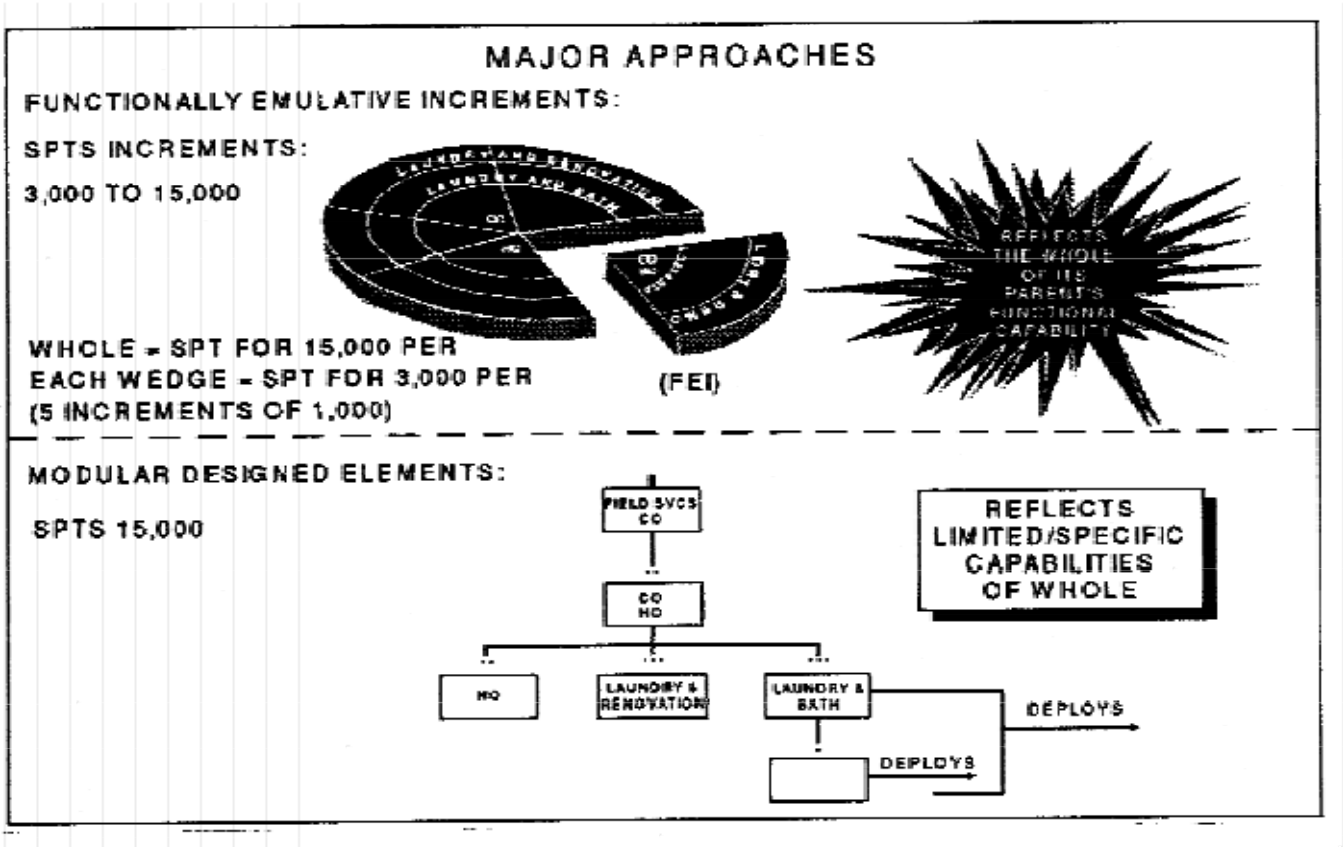
Como se pode constatar, o transporte estratégico da quantidade correcta de recursos humanos e materiais para o Teatro das Operações tendo em vista a satisfação das necessidades da Força deverá se encontrado através da optimização dessas mesmas necessidades mas tendo sempre presente, a necessidade de minimizar a necessidade de utilização dos meios de transporte estratégico para a sua satisfação.



ANEXO D

MODALIDADES MAIS UTILIZADAS EM TERMOS DE MODULARIDADE

Neste gráfico realçamos a constituição modular multifuncional onde se encontra traduzida a essência funcional completa das capacidades da unidade-mãe

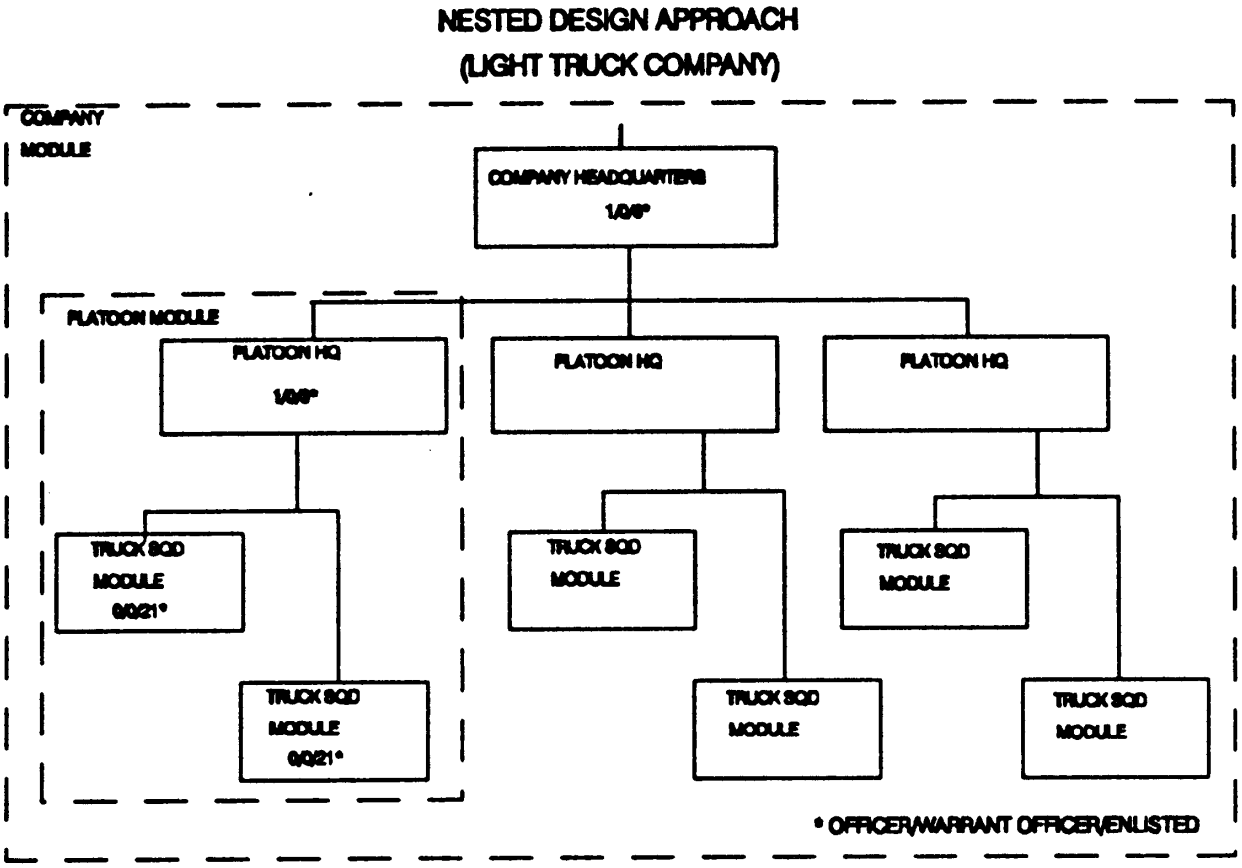


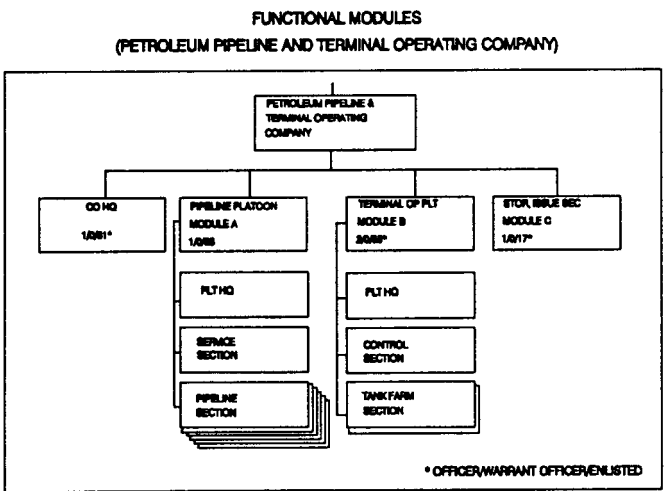
Em relação à constituição modular unifuncional, constata-se que esta reflecte através dos módulos que a compõem, apenas uma parte especifica e limitada de todas as capacidades da unidade-mãe.

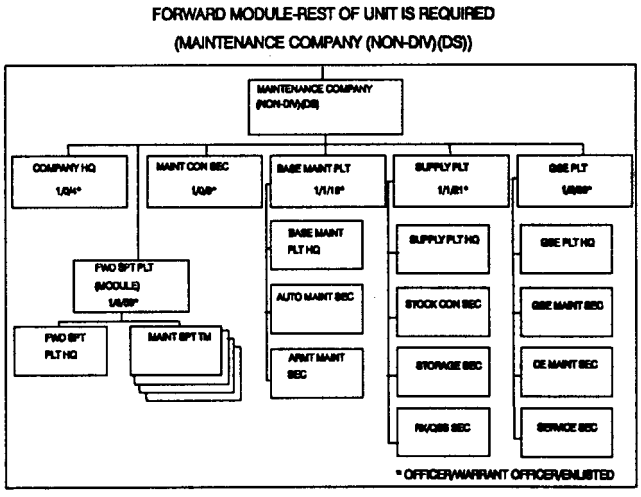
ANEXO E

OUTRAS MODALIDADES DE EMPREGO DA MODULARIDADE

Neste módulo de companhia podemos perceber a organização modular tipo "ninho" desenvolvida pela combinação de módulos básicos.







No quadro à esquerda temos o exemplo de módulos funcionais (por especialidade) e no quadro à direita o exemplo de módulos avançados com o seu Pelotão de Manutenção Avançado.

Constituição e faseamento de emprego das FOP

	JAN00					JAN01											JAN02											JAN03				
	1999					2000											2001											2002						
FOP´s	2º Semestre					1º Semestre					2º Semestre						1º Semestre					2º Semestre						1º Semestre					2º Semestre				
		Of	Sg	Pr	Tot		Of	Sg	Pr	Tot		Of	Sg	Pr	Tot		Of	Sg	Pr	Tot		Of	Sg	Pr	Tot			Of	Sg	Pr	Tot		Of	Sg	Pr	Tot
Cmd BMI	CMSM	29	30	41	**100**	CMSM	29	30	41	100	CMSM	29	30	41	100	CMSM	29	30	41	100	CMSM	29	30	41	100	CMSM		29	30	41	100	CMSM	29	30	41	100
Mód Ref CIMIC Cmd Brig	*(OB)*	*(1)*	*(1)*	*(3)*	*0*	*(OB)*	*(1)*	*(1)*	*(3)*	0	*(OB)*	*(1)*	*(1)*	*(3)*	0	*(OB)*	*(1)*	*(1)*	*(3)*	0	*(OB)*	*(1)*	*(1)*	*(3)*	0	*(OB)*		*(1)*	*(1)*	*(3)*	0	*(OB)*	*(1)*	*(1)*	*(3)*	0
CCS Cmd Brig	CMSM	4	15	68	**87**	CMSM	4	15	68	**87**	CMSM	4	15	68	**87**	CMSM	4	15	68	**87**	CMSM	4	15	68	**87**	CMSM		4	15	68	**87**	CMSM	4	15	68	**87**
Agr Mec	**1BIMec**	**27**	**90**	**300**	**417**	**2BIMec**	**27**	**90**	**300**	**417**	**2BIMec**	**27**	**90**	**300**	**417**	**2BIMec**	**27**	**90**	**300**	**417**	**1BIMec**	**27**	**90**	**300**	**417**	**1BIMec**		**27**	**90**	**300**	**417**	**1BIMec**	**27**	**90**	**300**	**417**
ECC	RC4	(5)	(21)	(70)	(96)	RC4	(5)	(21)	(70)	(96)	RC4	(5)	(21)	(70)	(96)	RC4	(5)	(21)	(70)	(96)	RC4	(5)	(21)	(70)	(96)	RC4		(5)	(21)	(70)	(96)	RC4	(5)	(21)	(70)	(96)
Mód Ref Bn	*(OB)*	*(6)*	*(5)*	*(4)*	*(15)*	*(OB)*	*(6)*	*(5)*	*(4)*	*(15)*	*(OB)*	*(6)*	*(5)*	*(4)*	*(15)*	*(OB)*	*(6)*	*(5)*	*(4)*	*(15)*	*(OB)*	*(6)*	*(5)*	*(4)*	*(15)*	*(OB)*		*(6)*	*(5)*	*(4)*	*(15)*	*(OB)*	*(6)*	*(5)*	*(4)*	*(15)*
ERec	RC4	5	31	134	**170**	RC4	5	31	134	170	RC4	5	31	134	170	RC4	5	31	134	170	RC4	5	31	134	170	RC4		5	31	134	170	RC4	5	31	134	170
CTm	BMI	6	30	151	**187**	BMI	6	30	151	187	BMI	6	30	151	187	BMI	6	30	151	187	BMI	6	30	151	187	BMI		6	30	151	187	BMI	6	30	151	187
BtrAC	BMI	6	20	67	**93**	BMI	6	20	67	93	BMI	6	20	67	93	BMI	6	20	67	93	BMI	6	20	67	93	BMI		6	20	67	93	BMI	6	20	67	93
CEng	BMI	5	22	107	**134**	BMI	5	22	107	134	BMI	5	22	107	134	BMI	5	22	107	134	BMI	5	22	107	134	BMI		5	22	107	134	BMI	5	22	107	134
CManLig	BMI	5	26	99	**130**	BMI	5	26	99	130	BMI	5	26	99	130	BMI	5	26	99	130	BMI	5	26	99	130	BMI		5	26	99	130	BMI	5	26	99	130
CReabSvç	CRT/BMI	5	25	133	**163**	CRT/BMI	5	25	133	163	CRT/BMI	5	25		30	CRT/BMI	5	25	133	163	CRT/BMI	5	25	133	163	CRT/BMI		5	25	133	163	CRT/BMI	5	25	133	163
Pel AAA Chaparral	BMI	1	5	22	**28**	BMI	1	5	22	28	BMI	1	5	22	28	BMI	1	5	22	28	BMI	1	5	22	28	BMI		1	5	22	28	BMI	1	5	22	28
Cmd BAI	CTAT	29	30	41	**100**	CTAT	29	30	41	100	CTAT	29	30	41	100	CTAT	29	30	41	100	CTAT	29	30	41	100	CTAT		29	30	41	100	CTAT	29	30	41	100
Mód Ref CIMIC Cmd Brig	*(OB)*	*(1)*	*(1)*	*(3)*	*0*	*(OB)*	*(1)*	*(1)*	*(3)*	0	*(OB)*	*(1)*	*(1)*	*(3)*	0	*(OB)*	*(1)*	*(1)*	*(3)*	0	*(OB)*	*(1)*	*(1)*	*(3)*	0	*(OB)*		*(1)*	*(1)*	*(3)*	0	*(OB)*	*(1)*	*(1)*	*(3)*	0
CCS Cmd Brig	CTAT	4	15	68	**87**	CTAT	4	15	68	**87**	CTAT	4	15	68	**87**	CTAT	4	15	68	**87**	CTAT	4	15	68	**87**	CTAT		4	15	68	**87**	CTAT	4	15	68	**87**
BIAT	**AMSJ**	**27**	**90**	**325**	**442**	**AMSJ**	**27**	**90**	**325**	**442**	**RI15**	**27**	**90**	**325**	**442**	**RI15**	**27**	**90**	**325**	**442**	**RI15**	**27**	**90**	**325**	**442**	**AMSJ**		**27**	**90**	**325**	**442**	**AMSJ**	**27**	**90**	**325**	**442**
Mód Ref Bn		*(6)*	*(5)*	*(4)*	*(15)*		*(6)*	*(5)*	*(4)*	*(15)*		*(6)*	*(5)*	*(4)*	*(15)*		*(6)*	*(5)*	*(4)*	*(15)*		*(6)*	*(5)*	*(4)*	*(15)*			*(6)*	*(5)*	*(4)*	*(15)*		*(6)*	*(5)*	*(4)*	*(15)*
ERec	RC3	5	31	134	**170**	RC3	5	31	134	170	RC3	5	31	134	170	RC3	5	31	134	170	RC3	5	31	134	170	RC3		5	31	134	170	RC3	5	31	134	170
BtrAC	RA4	6	19	65	**90**	RA4	6	19	65	90	RA4	6	19	65	90	RA4	6	19	65	90	RA4	6	19	65	90	RA4		6	19	65	90	RA4	6	19	65	90
CEng	EPE	5	22	107	**134**	EPE	5	22	107	134	EPE	5	22	107	134	EPE	5	22	107	134	EPE	5	22	107	134	EPE		5	22	107	134	EPE	5	22	107	134
Cmd BLI	QG/BLI	29	30	41	**100**	QG/BLI	29	30	41	100	QG/BLI	29	30	41	100	QG/BLI	29	30	41	100	QG/BLI	29	30	41	100	QG/BLI		29	30	41	100	QG/BLI	29	30	41	100
Mód Ref CIMIC Cmd Brig	*(OB)*	*(1)*	*(1)*	*(3)*	*0*	*(OB)*	*(1)*	*(1)*	*(3)*	*0*	*(OB)*	*(1)*	*(1)*	*(3)*	*0*	*(OB)*	*(1)*	*(1)*	*(3)*	*0*	*(OB)*	*(1)*	*(1)*	*(3)*	*0*	*(OB)*		*(1)*	*(1)*	*(3)*	*0*	*(OB)*	*(1)*	*(1)*	*(3)*	*0*
CCS Cmd Brig	QG/BLI	4	15	68	**87**	QG/BLI	4	15	68	**87**	QG/BLI	4	15	68	**87**	QG/BLI	4	15	68	**87**	QG/BLI	4	15	68	**87**	QG/BLI		4	15	68	**87**	QG/BLI	4	15	68	**87**
BI	**RI13**	27	90	323	**440**	RI13	27	90	323	440	RI13	27	90	323	440	RI14	27	90	323	440	RI14	27	90	323	440	RI14		27	90	323	440	RI13	27	90	323	440
Mód Ref Bn		*(6)*	*(5)*	*(4)*	*(15)*		*(6)*	*(5)*	*(4)*	*(15)*		*(6)*	*(5)*	*(4)*	*(15)*		*(6)*	*(5)*	*(4)*	*(15)*		*(6)*	*(5)*	*(4)*	*(15)*			*(6)*	*(5)*	*(4)*	*(15)*		*(6)*	*(5)*	*(4)*	*(15)*
ERec	RC6	5	31	134	**170**	RC6	5	31	134	170	RC6	5	31	134	170	RC6	5	31	134	170	RC6	5	31	134	170	RC6		5	31	134	170	RC6	5	31	134	170
BtrAC	RA5	6	19	65	**90**	RA5	6	19	65	90	RA5	6	19	65	90	RA5	6	19	65	90	RA5	6	19	65	90	RA5		6	19	65	90	RA5	6	19	65	90
CEng	RE3	5	22	107	**134**	RE3	5	22	107	134	RE3	5	22	107	134	RE3	5	22	107	134	RE3	5	22	107	134	RE3		5	22	107	134	RE3	5	22	107	134
CTm	EPTm	6	30	151	**187**	EPTm	6	30	151	187	EPTm	6	30	151	187	EPTm	6	30	151	187	EPTm	6	30	151	187	EPTm		6	30	151	187	EPTm	6	30	151	187
CTransp	BST	5	19	137	**161**	BST	5	19	137	161	BST	5	19	137	161	BST	5	19	137	161	BST	5	19	137	161	BST		5	19	137	161	BST	5	19	137	161
CManLig	EPSM	5	22	97	**124**	EPSM	5	22	97	124	EPSM	5	22	97	124	EPSM	5	22	97	124	EPSM	5	22	97	124	EPSM		5	22	97	124	EPSM	5	22	97	124
CReabSvç	EPAM	6	25	135	**166**	EPAM	6	25	135	166	EPAM	6	25	135	166	EPAM	6	25	135	166	EPAM	6	25	135	166	EPAM		6	25	135	166	EPAM	6	25	135	166
EsqPE	RL2	4	10	86	**100**	RL2	4	10	86	100	RL2	4	10	86	100	RL2	4	10	86	100	RL2	4	10	86	100	RL2		4	10	86	100	RL2	4	10	86	100
PelCEst	EPTm	1	3	12	**16**	EPTm	1	3	12	16	EPTm	1	3	12	16	EPTm	1	3	12	16	EPTm	1	3	12	16	EPTm		1	3	12	16	EPTm	1	3	12	16
Pel Contr	EPE	1	4	30	**35**	EPE	1	4	30	35	EPE	1	4	30	35	EPE	1	4	30	35	EPE	1	4	30	35	EPE		1	4	30	35	EPE	1	4	30	35
Pel Def NBQ	EPE	1	8	35	**44**	EPE	1	8	35	**44**	EPE	1	8	35	**44**	EPE	1	8	35	**44**	EPE	1	8	35	**44**	EPE		1	8	35	**44**	EPE	1	8	35	**44**
PelGE	EPTm	1	5	18	**24**	EPTm	1	5	18	24	EPTm	1	5	18	24	EPTm	1	5	18	24	EPTm	1	5	18	24	EPTm		1	5	18	24	EPTm	1	5	18	24
PelAAA	RAAA1	1	16	30	**47**	RA4	1	16	30	47	RA4	1	16	30	47	RA4	1	16	30	47	RA4	1	16	30	47	RA4		1	16	30	47	RA4	1	16	30	47
PAObj	EPA	1	18	31	**50**	EPA	1	18	31	50	EPA	1	18	31	50	EPA	1	18	31	50	EPA	1	18	31	50	EPA		1	18	31	50	EPA	1	18	31	50
DOE	CIOE	3	14	31	**48**	CIOE	3	14	31	48	CIOE	3	14	31	48	CIOE	3	14	31	48	CIOE	3	14	31	48	CIOE		3	14	31	48	CIOE	3	14	31	48
HCM	BSS	8	20	50	**78**	BSS	8	20	50	78	BSS	8	20	50	78	BSS	8	20	50	78	BSS	8	20	50	78	BSS		8	20	50	78	BSS	8	20	50	78
TOTAL		**288**	**902**	**3443**	**4633**		**288**	**902**	**3443**	**4633**		**288**	**902**	**3310**	**4500**		**288**	**902**	**3443**	**4633**		**288**	**902**	**3443**	**4633**			**288**	**902**	**3443**	**4633**		**288**	**902**	**3443**	**4633**

FOP **FOP** **FOP** **FOP** **PREPARAÇÃO**

ANEXO G

CONCEITO DE EMPREGO DO APOIO DE SERVIÇOS

TRADOC Pamphlet 525-53

OPERATIONAL CONCEPT
COMBAT SERVICE SUPPORT

1 April 1997

FOREWORD

United States (US) national and military strategy is changing dramatically in response to massive global political and economic turbulence. Tomorrow's Army will be faced with a far more complex world than ever before. The dynamics of this new environment are compounded by the broad availability of advanced technology. Information technology is expected to make a thousand fold advance over the next 20 years. The rapid diffusion of information, enabled by these technological advances, particularly those offered through the use of space systems, will challenge the relevance of traditional organizational and management principles. The Army must recognize where bold change is necessary and where little or no change is needed. Meeting these challenges will take a long-term sustained commitment to excellence--to develop leaders, soldiers, equipment, and organizations capable of performing the diverse missions of the future. Whether appearing in the form of an effective peacetime forward presence or a decisive power projection, readiness and the ability to sustain such missions will be the hallmarks of tomorrow's Army.

This pamphlet provides a conceptual framework for the accomplishment of combined arms support for the future. It is intended to be a living document that presents emerging doctrinal ideas of support for the future. Rapid force projection, extended lines of communication, and potential forcible entry into bare-based areas of operations require Army development of a combat service support (CSS) system that is versatile, deployable, and expansible. The Army remains the nation's pre-eminent land-based strategic force and, as such, will be increasingly called upon to perform support operations in joint, multinational, and interagency environments. Army CSS personnel must be fully prepared to respond to these worldwide challenges.

Department of the Army
Headquarters, United States Army
Training and Doctrine Command
Fort Monroe, Virginia 23651-5000

TRADOC Pamphlet 525-53

1 April 1997

Military Operations
COMBAT SERVICE SUPPORT

Summary. This pamphlet serves as the basis for developing doctrine, training, leader development, organizations, materiel, and soldier (DTLOMS) focused requirements and solutions for CSS operations. Under this concept, CSS capabilities are projected across full dimensional operations to meet mission requirements. It proposes a baseline from which CSS needs of the future can be addressed at the strategic, operational, and tactical levels.

Applicability. This pamphlet applies to all U.S. Army Training and Doctrine Command (TRADOC) and Department of the Army (DA) activities which develop DTLOMS requirements.

Suggested improvements. The proponent of this pamphlet is the Deputy Chief of Staff for Combat Developments. Send comments and suggested improvements on DA Form 2028 (Recommended Changes to Publications and Blank Forms) through channels to Commander, TRADOC, ATTN: ATCD-BP, Fort Monroe, VA 23651-5000. Suggested improvements may also be submitted using DA Form 1045 (Army Ideas for Excellence Program (AIEP) Proposal).

Availability. This publication is also available on the TRADOC Homepage at http://www-tradoc.army.mil.

Chapter 1
Introduction

1-1. Purpose.

a. The purpose of this pamphlet is to provide an overarching combat service support (CSS) operational concept outlining in general terms the capabilities required to support future Army operations as described in TRADOC Pamphlet 525-5. Details on specific functional areas and initiatives will be developed in separate concepts and in other DTLOMS products. TRADOC Pamphlet 525-5 is the conceptual basis for the Army's continuing growth toward the future. It describes future full-dimensional operations for Force XXI--a strategic Army that will continue to meet our national security requirements. It describes how the Army will conduct operations in the future when control on land is essential to success. The future Army--Force XXI--must be prepared to face the full range of military operations and missions. The Army, therefore, must design organizations and develop capabilities that will allow it to be rapidly tailorable and expansible, strategically deployable, and effective as part of a joint and multinational team.

b. Force XXI is complex. It will depend on continuing hardware improvements (new and improved warfighting systems, radios, transport or materials-handling equipment, etc.), on adopting new techniques for assimilating and distributing knowledge (intelligence collection, the exploitation of computers, satellite communications, etc.), and on the dissemination of information to all echelons. It will also depend on updating doctrine and training personnel to employ these tools most effectively. Mastery of the many associated changes will project Force XXI into the Twenty-First Century as the world's preeminent land fighting force.

c. The effectiveness of future Force XXI military operations will be tied to the CSS capability to acquire, project, receive, onward move, sustain, and redeploy the joint/multinational force. From national providers at the strategic level to support forces at the tactical level, this concept describes the CSS pipeline capabilities the Army requires to support the full range of joint, interagency, and multinational operations (see fig 1-1). Through information technology, the CSS managers will have a wealth of information upon which to draw a picture of the battlefield. A common, relevant picture of the battlefield coupled with the information provided by a fully integrated CSS system (ICS3) will allow the Force XXI CSS manager to anticipate requirements and provide focused support when and where needed.

1-2. References. Appendix A contains the required and related publications used in this pamphlet.

1-3. Explanation of abbreviations and terms. Abbreviations and special terms used in this pamphlet are explained in the glossary.

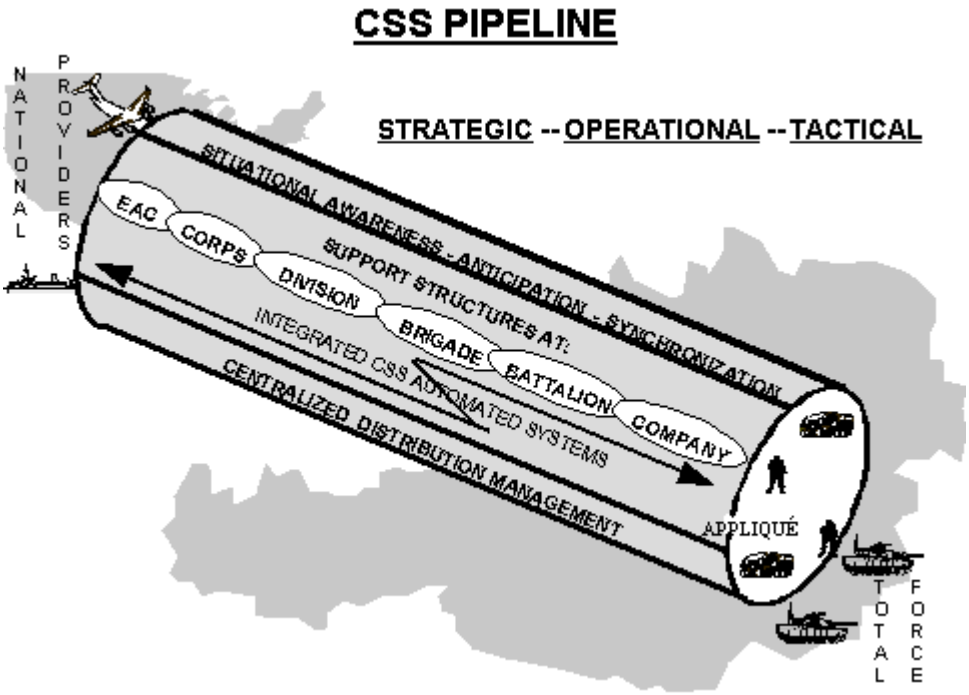


Figure 1-1. CSS Pipeline

Chapter 2
Overview

2-1. Why the concept is needed. The character of future military operations can no longer be anticipated merely by analyzing an adversary's stage of economic development; regional or even local powers may possess the capability of employing extremely advanced military technologies. Actions by an adversary will require intelligence analysis into areas extending far beyond the traditional battlefield focus. Current political and technical trends suggest that, as a matter of course, successful operations will depend on multinational commitment, joint involvement, and high tolerance for the new forms of conflict. Future military success requires the Army to rapidly project lethal and survivable combat power into any part of the world and support forces across a broad range of military operations and climatic conditions. To meet these demands, a CSS system is needed that is versatile, deployable, and expansible. Development of this CSS system necessitates weaving the current strategic, operational, and tactical levels of CSS into a seamless continuum. This seamless system must extend throughout the total force and take into consideration the integration and use of civilians.

2-2. Assumptions.

a. Threat. As the world changes, so does the nature of the threat. The most serious challenge to U.S. military superiority on the future battlefield will come from the proliferation of advanced weapons and technology. Conditions or events that would cause forces to be employed will challenge Army capabilities. Such conditions include drug trafficking, natural and man-made disasters, regional conflicts, civil wars, insurgencies, and intimidation by irrational and often ruthless extremists who have available for their use all types of advanced weapons and systems, including weapons of mass destruction. CSS personnel, equipment, and facilities will continue to be a target for threat forces. The

CSS system is vulnerable to attack from the entire spectrum of threat weaponry and forces to include sabotage and clandestine operations. Proximity of CSS assets to other targets on the battlefield, the level of conflict, and the region of the world where operations are being conducted will affect the likelihood of encountering various threats. CSS elements must be prepared to perform their designated role within the overall security plan.

b. The Reserve Component (RC). In addition to support provided by the active Army, both the U.S. Army Reserve and the Army National Guard will be relied upon to provide a number of CSS units and functions in support of the full range of military operations and missions. Given a shrinking force structure and declining defense expenditures in general, this reliance on RC CSS capabilities will increase in the future. The RC will continue to maintain a significant portion of the Army's CSS force structure.

c. Civilians in support of military operations. Department of Defense (DOD) civilian personnel; personnel from non-DOD organizations; civilian contractors such as those associated with the Logistics Civil Augmentation Program (LOGCAP); and elements of host nation, allied, and coalition support organizations will provide an ever-increasing number of capabilities in support of future Army operations. Use of these support personnel will require their integration into the battle command environment and into the CSS framework, as well as mission training for the civilians involved.

d. Joint, multinational, and interagency operations. Early Twenty-First Century American land operations will be fully integrated, completely joint, and usually multinational. Required legislative intervention will facilitate such integrated operations. The goal is that these operations be conducted under conditions where U.S. forces, supported by our joint/multi-national partners, enjoy a qualitative materiel, training, leadership, and, most importantly, information edge.

(1) Joint operations. Missions that require the projection of Army forces are intrinsically joint operations. In addition, joint force commanders may exercise directive authority for support to ensure effective execution of operations plans, economy of operations, and prevention of duplication of facilities and functions. Therefore, joint force CSS interoperability will be crucial to the success of CSS operations. Army CSS doctrine must be compatible with joint doctrine. Further, in addition to effectively using communications systems to pass CSS information, joint force CSS personnel must be able to use and integrate national intelligence systems linked into joint command, control, and terrestrial and space-based communications systems. During peacetime, the Army must properly train, structure, and equip its units to prepare for joint CSS operations in support of the projection of U.S. forces.

(2) Multinational operations. Multinational operations will continue to require a different CSS integration process than the one used during the Cold War. Historically, providing CSS has been predominantly a national responsibility. Multinational efforts designed to streamline the focus of combat power are supplanting national doctrines. The Army can expect combatant commanders to be more prone to ask national commanders to take on CSS missions in support of the multinational force. Given the demands of these types of operations, interoperability between forces of different nations (as well as the various U.S. services) in doctrine, tactics, techniques, procedures, and equipment will be required. CSS automation and communications must support these efforts, though CSS personnel must understand and plan to deal with the fact that multinational partners (and various elements of the joint force, even within the Army component) are likely to be at different stages of technological development. While standardization is the ideal, it is rarely fully achievable; therefore, interoperability efforts must continue where they are feasible and practical. Multinational forces must capitalize on the unique strengths of individual members who can best provide specific support to deploying forces.

(3) Interagency operations. Army forces will often operate in support of non-DOD civilian agencies in achieving objectives associated with the economic, political, and informational elements of national power. In some cases, these interagency operations may require support from the Army's CSS system. In all cases, Army CSS personnel will coordinate with other involved agencies to ensure effectiveness and efficiency in the total support effort.

e. Technology. The Army will continue to leverage existing and emerging technology capabilities to enhance support. Advances in information management and distribution will help CSS commanders in integrating support functions, and in tailoring CSS forces and arranging them on land. New communications systems will allow nonhierarchical dissemination of intelligence, CSS, and other data into and within the CSS environment.

2-3. Overarching concept. This concept supports the Army's overarching concept described in TRADOC Pamphlet 525-5, and the new Force XXI division operations described in TRADOC Pamphlet 525-71 (to be published). It also supports the capstone joint logistics doctrine in Joint Publication 4-0, as well as the Army Strategic Logistics Plan.

a. Force XXI is defined in TRADOC Pamphlet 525-5 by five characteristics: doctrinal flexibility, strategic mobility, tailorability and modularity, joint and multinational connectivity, and versatility. All these characteristics influence this CSS concept. In addition, TRADOC Pamphlet 525-5 describes the five battle dynamics for meeting the challenges of the future as battle command, battlespace, depth and simultaneous attack, early entry, and CSS.

b. TRADOC Pamphlet 525-71 describes the characteristics of Force XXI division operations as multidimensional, and defined by precision, nonlinearity, distribution, simultaneity, and integration. It goes on to further depict the execution of Force XXI operations through patterns of operations. These patterns will incorporate all elements of operations, from initial receipt of mission through return to home station. The patterns will not be phases nor will they be sequential. They will serve to focus the many tasks armies have always performed in war and other military operations. The patterns are: project the force, decisive operations, gain information dominance, shape the battlespace, protect the force, and sustain the force.

c. The CSS system must be designed to meet support requirements in all patterns of operations. To do so, CSS capabilities must be developed according to the criteria shown in figure 2-1.

2-4. Limitations.

a. Successful long-term implementation of this concept is contingent upon the vast array of support information systems and an accompanying communications network to provide a timely, accurate picture of the entire battlefield. Integration of CSS automation systems within the Army Battle Command System (ABCS) is essential to execute CSS effectively. This integration, along with compatibility with joint systems, will be required to facilitate the flow of CSS requirements and synchronization of support activities. It will also enhance throughput and increase the velocity of support.

b. CSS will be influenced by the resources available in the area of responsibility (AOR), including materiel prepositioned on land or afloat, host nation support (HNS), and contributions by other members of a multinational force. The level of infrastructure development (such as port facilities, intratheater lines of communications, and other facilities) will measurably affect CSS operations and force closure into the

AOR. Resources not available locally must be brought into the AOR, committing scarce strategic lift resources.

c. The extent to which future CSS operations are multinational will be limited by U.S. and international laws, treaties, and agreements. Joint CSS operations will be subject to U.S. laws, joint doctrine, and interservice agreements. Successful implementation of this concept will also be limited by the level of interoperability of equipment and systems with other services and allies.

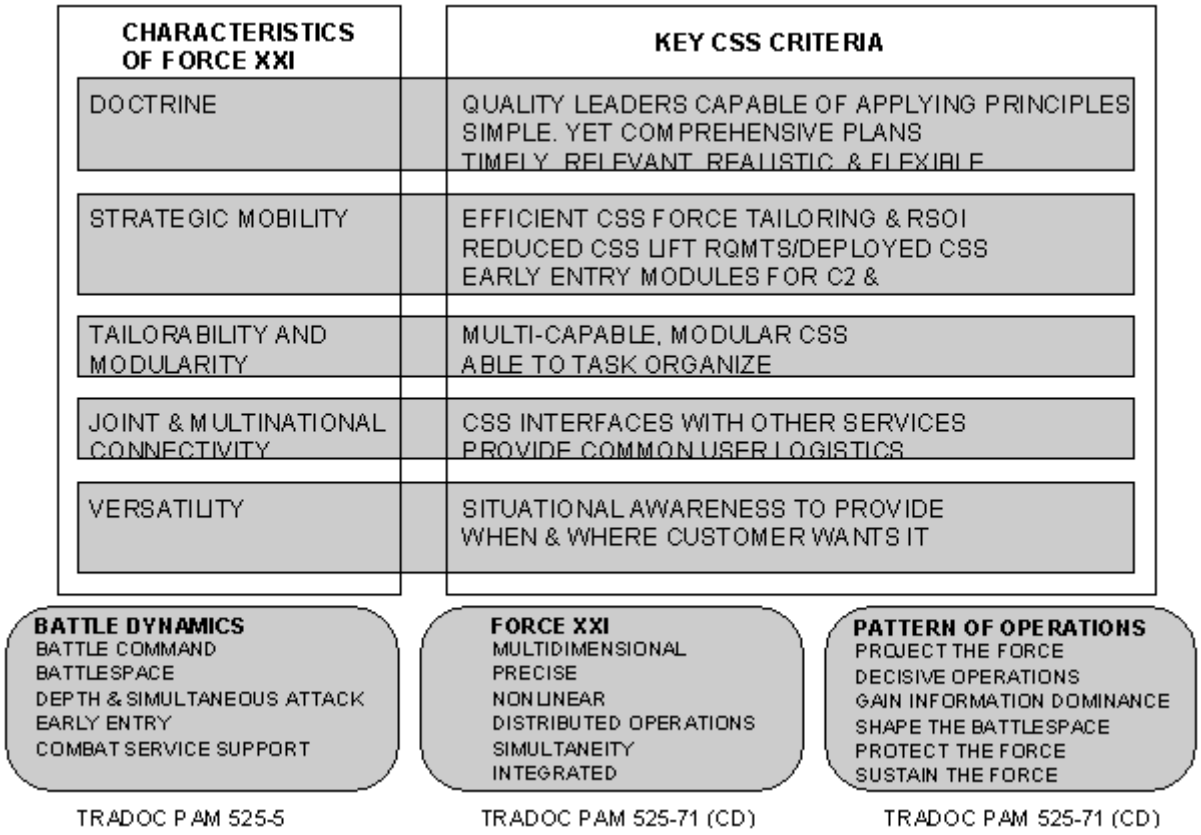


Figure 2-1. Overarching concept relationships

Chapter 3
Concept

3-1. Overview. The Force XXI Army will require a seamless CSS system capable of providing responsive, effective support for America's Army in any scenario. The system will embody a support continuum consisting of soldiers, civilians (DOD and contractors), organizations, modular support forces, and an integrated, intelligent, networked information system. It will establish a CSS pipeline providing all CSS from the sustainment base to meet the requirements of the battle commander throughout the full range of Army operations. Command, control, and coordination headquarters responsible to the battle commander will be in the area of operations. These commands will direct the flow of support through the pipeline to meet operational needs and Commander in Chief (CINC) priorities. To achieve such a system will require a cultural change in how the Army views CSS. As discussed below, it will require new approaches to such areas as database management, dependence on organizations outside the military for support, reliance on real-time situational awareness, and

conversion from traditional battlespace relationships, with wholesale and retail orientations and breaks between providers at various levels of war, to a seamless CSS continuum. Further, it is envisioned that improvisation, one of the fundamental characteristics of present CSS doctrine, will remain as critical as it currently is. In a rapidly changing strategic environment with dramatic advances in technological applications to military operations, CSS doctrine must be flexible, and support personnel must be willing and able to apply evolving principles and tech niques to varying dynamic situations. Transition to this future CSS system will occur incrementally. Some aspects of it, such as use of host nation support, the logistics support element, or contingency contracting, will involve refinement of current systems and practices. Implementation of other elements of the system, such as battlefield distribution, integrated sustainment management, and velocity management, has already begun but will continue to evolve for years to come. Still other components such as some of the automated systems and space-based capabilities, will take significant long-term effort to bring to maximum effectiveness. Activities required to transition from the current CSS system to the system described in this pamphlet are outlined in chapter 4.

a. Support to force projection. The challenge of Army CSS is extraordinarily wide-ranging. The system must anticipate support requirements for future operations and work towards acquiring and developing the personnel and materiel resources and other capabilities to meet those needs. It must then apply these resources to support forces during training and other peacetime activities. In addition, the system must provide support throughout all stages of force projection operations. In this context, it must first support the mobilization and deployment of forces to an area of operations. These forces must include a modular CSS force, with an adequate command and control structure, sequenced to arrive early in the area of operations (AO) and build incrementally to meet the needs of the supported force as it flows into the area. The CSS force will focus initially on providing reception, staging, onward movement, and integration (RSOI) support to the arriving force; such support includes sustainment support to early entry elements. The CSS focus will transition to force sustainment as the force conducts operations. Support must include all aspects of CSS--maintenance, transportation, combat health support, supply, personnel/personnel service support, and field services. The system will have to meet the significant demands placed on it during reconstitution, redeployment, and demobilization of forces once objectives have been met. The CSS system must be flexible enough to provide support to operations ranging from small unit operations in remote sites to theater-wide, high operational tempo combat operations. These requirements dictate the need to establish an efficient sustainment base to acquire and develop the full range of CSS assets and capabilities to fill the pipeline with all the resources needed to sustain the operational tempo of the force. The system must also continue to improve its ability to move and control the resources through the pipeline itself. Finally, the trend toward developing CSS organizations which are flexible and deployable to minimize the support footprint in the area of operations will persist. These organizations will have an improved capability to anticipate requirements in the battlespace and direct the flow of support through the pipeline to meet the battle commander's needs. CSS organizations will employ modularity and split based operations to meet these organizational requirements. Modular organizations will consist of modules with discrete functional capabilities. They may operate as a single entity, or modules may be detached from the parent unit and used to tailor a force projection organization. The parent unit will remain operative at a reduced capability level. Split based operations will allow routine CSS management functions to be accomplished within the continental U.S. (CONUS) or at the home station while critical wartime functions can be projected forward early in an operation.

b. Single CSS system. This chapter discusses CSS in terms of strategic, operational, and tactical implications. However, this framework is merely a construct to facilitate discussion. In reality, the distinctions among levels is already somewhat artificial, and they will become increasingly so in the future. Ultimately, the conduct of Force XXI land operations will require a single, seamless CSS system.

U.S. forces will seek to dominate an expanded battlespace with a minimal number of deployed troops through depth and simultaneous attack. This will present vast challenges for the CSS system. It will have to meet various simultaneous demands across a potentially large battlespace with a reduced CSS force presence. This can only be accomplished with an agile system with no breaks in the distribution flows at seams between levels. It will also require enhanced situational awareness and full synchronization of effort. Support personnel must have an increased awareness of both what is required and what is available. Understanding what is required relies on synchronization of CSS operations with operational activities through the ABCS. Support will become more efficient and effective through improved anticipation as CSS personnel are better able to foresee future operations and to identify, accumulate, and maintain the assets, capabilities, and information required to support them. Awareness of what is available and the ability to direct it to where it is needed at the required time will require total integration of all components of the CSS system--including active and reserve component Army, joint, multinational, civilian, and other agency components. The system must network decision makers as well as those responsible for executing CSS operations. It must link CINCs, DOD and service staff managers, personnel support managers, weapon system managers, distribution managers, services managers, information managers, and CSS operators. This network will support continued CSS capability enhancements through initiatives such as telemedicine, battlefield distribution, total asset visibility, and velocity management.

(1) Telemedicine will provide real-time medical situational awareness and casualty care to the soldier in a manner independent of distance and time through superior medical monitoring and clinical consultation throughout the battlespace. Telemedicine will exploit advanced medical technologies, integrating modalities (audio, visual, and digital) to network patient care from the medic in the battlespace to CONUS. This ability to virtually project forward the right mix of skills and clinical capabilities will greatly enhance the quality of health care by drawing on critically short personnel resources from an expert location to allow valuable assets to be dually resourced against deployed and fixed patient loads.

(2) Battlefield distribution (BD) will provide the combatant commanders with fully integrated distribution management. It will enable U.S. forces to effectively request, receive, redirect, maintain, distribute, control, and retrograde support within a single distribution system. It will maximize throughput and ensure timely visibility of units, personnel, unit and sustainment materiel, and services moving to and within the area of operations. The essential characteristics of BD include a designated distribution manager at each level of command, employment of a hub and spoke distribution system, reduction in the layering effect of current support operations, increased throughput operations, improved CSS communications flow, real-time horizontal and vertical asset visibility, and a theater force opening module.

(3) Total asset visibility (TAV) will provide support personnel at all levels with a near real-time picture of asset availability throughout the supply system. TAV consists of two subordinate elements: asset visibility and in-transit visibility. Asset visibility will focus on resources in inventory, or static in the CSS system. In-transit visibility will focus on resources in motion through the CSS pipeline. Ultimately, distribution managers must have visibility of Army assets as well as all common-user items for which the Army has executive agency responsibilities to provide in order to match theater requirements to capabilities. TAV will be greatly enhanced and dependent on the use of space systems.

(4) Velocity management (VM) will be aimed at enhancing the CSS system's capability of getting support into the hands of the soldier as fast as any first-rate commercial firm, while providing a hedge against unforeseen interruptions in the CSS pipeline. The focus of VM is on CSS processes and how they can be improved. It will find and eliminate sources of delay and undependability in Army's CSS

processes. It will ultimately result in reduced stocks and real dollar savings as the Army replaces support mass with precision and speed.

(5) Automation and communications are the critical enablers that hold together the CSS continuum. New Global Command and Control System (GCCS) and GCCS-compatible automation and communications technologies and procedures must be leveraged to support force projection in a joint, multinational, and inter-agency environment. Today's practice of processing data sequentially at different horizontal echelons will be replaced by a system of information access for organizations in the sustainment base as well as in the battlespace. Automated information technologies will support source data automation through a variety of media. Knowledge and information will be available through data access to a single CSS database using knowledge-based, intelligent networks. The Integrated CSS System (ICS3) will establish the overall architecture and needs for CSS automation and communications in accordance with (IAW) the Army Technical Architecture. Tactical users will communicate with the system using portable, state-of-the-art input/output devices featuring a single standard system with embedded functional applications. Those applications will be updated through the intelligent network as system changes are approved. Using the concept of assured support (a predictive push and responsive pull system of support), use of supplies and services in the battlespace will generate requirements in the CSS system with support provided directly to the unit's peacetime location or, during operations, to CSS personnel within the battle command. Knowledge-based systems will refine predictive push support pre-planned by the operational commanders and strategic providers. In addition, the operational commander will retain a capability to request support outside that pre-established support as mission requirements evolve. Through simultaneity, all echelons and organizations supporting the operation will have access to the same CSS and operational data in real time at the same time as the unit, the support manager, CSS command elements, the Army service component commander, the CINC, or DA headquarters. To gain efficiencies at all levels and to minimize the support presence in the area of operations, the system will also continue to give priority of effort to integrating support with other services, nations, and agencies, as well as private sources. So, for example, automation and communications will link vendors and transportation elements such as freight forwarders directly to the Army's support system and provide better support for units in the field.

(6) Finally, Army support will expand the use of space-based systems far beyond current levels. Additional applications of space-based technologies will significantly upgrade the speed and accuracy of CSS information available to commanders.

c. Full range of military operations and missions. The fundamental purpose of the Army is, and will remain, to provide the land component of the joint force to fight and win the nation's wars whenever and wherever required. The Army's CSS system must always be capable of supporting this mission. However, it must also be able to provide routine sustainment during peacetime, as well as support to any selective engagements conducted during peace or to deter conflict. In some Army peacetime engagements, such as humanitarian operations, CSS may be the predominant Army activity. In all engagements, it will play a part. Whether the operation involves military-to-military contacts, nation assistance, security assistance, counterdrug and counterterrorism, peacekeeping, or any of the wide range of deterrence and conflict prevention operations, CSS is required in both the force projection and sustainment aspects. Functions performed are essentially the same as those performed during war. However, there will be differences. Support personnel will likely have to establish effective interfaces with forces of other countries and a potential myriad of governmental and international agencies. Operations may also include a higher incidence of the Army providing support to civilians.

d. Characteristics. In short, the characteristics of an Army CSS system to meet the requirements of Force XXI are listed below:

(1) Integrated into a single CSS system.

(2) Based on an intelligent, networked system electronically linked with compatible communications operating in real time.

(3) Digitized, space-based, simultaneous, and anticipatory.

(4) Designed to interface with joint, multinational, and interagency elements and take advantage of all potential sources of support including HNS and civilian sources.

(5) Synchronized and compatible with all active and reserve combat, combat support, and CSS organizations.

(6) Providing horizontal and vertical visibility of assets throughout the system.

(7) Built on flexible, modular organizational elements.

(8) Operating under a concept of assured support, which involves a predictive push and a responsive pull-type interface between provider and user with the assurance of the right support on time where it is needed.

(9) Cost effective and transparent to user.

(10) Based on nonhierarchical structure with multifunctional components.

(11) Knowledge-based versus based on echeloned sequential processing.

(12) Integrated into the overall security plan.

3-2. Strategic CSS. Strategic CSS involves the national-level capability to manage, resource, and control the personnel activities, financial management, transportation, materiel management, maintenance, combat health support, services (to include explosive ordnance disposal), procurement, distribution, and force projection support functions for the Army or other joint or multinational forces. It brings the full power of the national sustainment base (including DOD civilians as well as the U.S. industrial base) to satisfy the CSS needs of the supported CINC over a seamless pipeline of support that extends directly to the warfighting elements (fig 3-1). In peacetime and wartime, this includes all functional CSS operations in the U.S. and its territories and in areas of operations that are not performed by integral elements of deployable, combatant organizations that would constitute the joint forces command.

a. Functions. Strategic functions revolve around maintaining the national sustainment base and providing support to force projection. Strategic support elements fill the pipeline with personnel and materiel resources and services capabilities required by the supported CINC, conduct industrial operations, maintain the industrial base, provide information services, provide strategic-level services, and manage strategic stockpiles. They focus on the following:

(1) Determining support requirements at global and regional levels.

(2) Acquiring resources while forging strategic alliances.

(3) Coordinating industrial base activity. Integrating personnel, financial management, materiel, services, and distribution management information systems of the Army with other military services and governmental agencies.

(4) Providing base support and services.

(5) Maintaining national-level medical services and facilities.

(6) Determining requirements for, and stockpiling and positioning resources afloat and on land around the world.

(7) Deploying and maintaining forward presence forces.

(8) Identifying mobilization and demobilization requirements and resources.

(9) Providing strategic mobility.

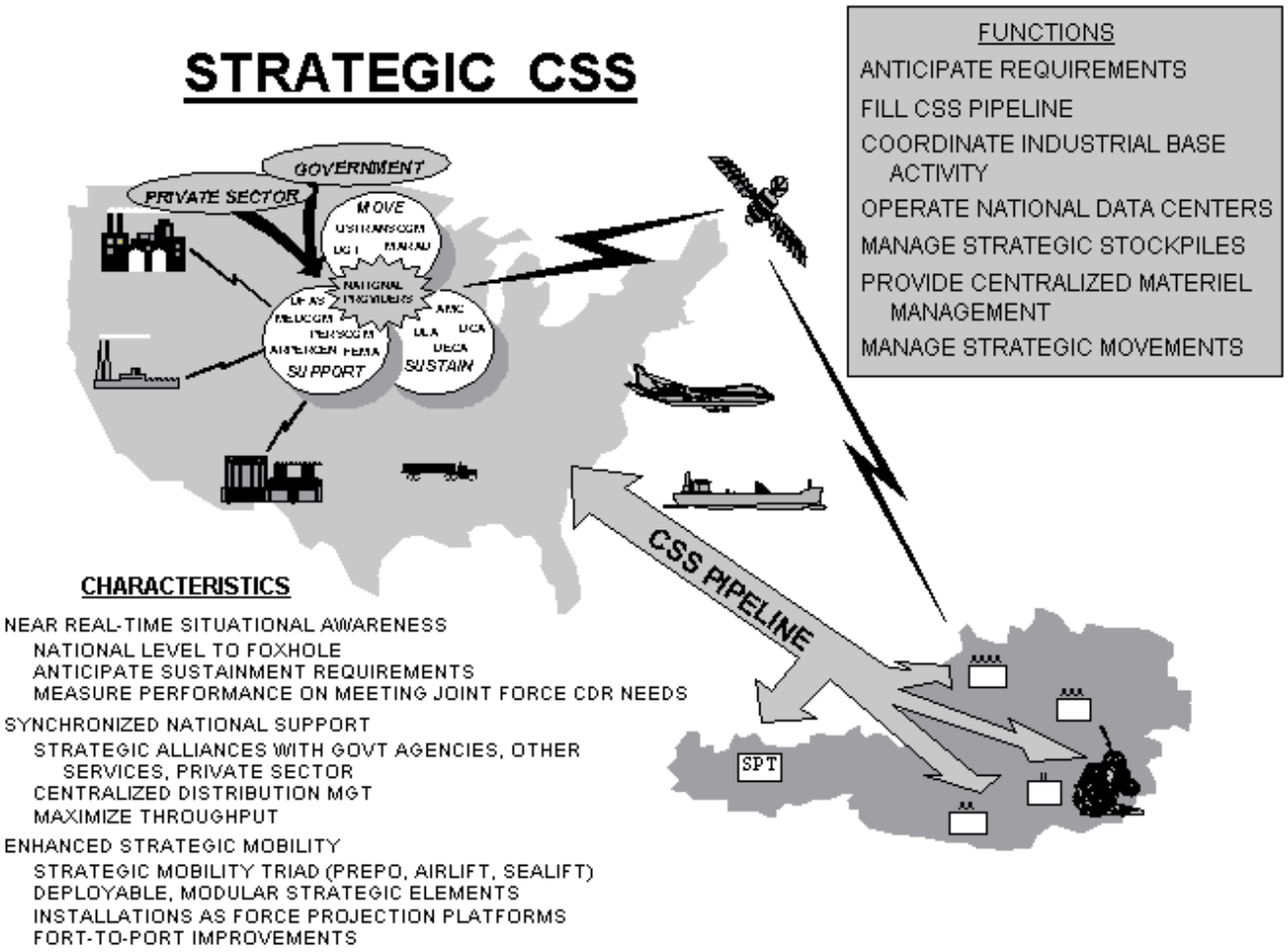


Figure 3-1. Strategic CSS

b. Sustainment base. The sustainment base, as well as strategic deployment components, represents a national capability. It involves DOD, the military services, and other government agencies with the

support of the private sector. These national providers comprise the national-level capabilities to manage, resource, and control the materiel management, maintenance, procurement, services, distribution, and deployment functions for the Army and other joint and multinational customers. Whether DOD involvement becomes more centralized (resulting in fewer national providers) or the services maintain their current level of strategic capabilities, strategic Army elements will increasingly have to integrate operations with other providers of support at the national level (fig 3-1) as the national infrastructure becomes more streamlined.

(1) The challenge facing the sustainment base is to meet the needs of the combatant commanders in the Force XXI battlespace of depth and simultaneous attacks while operating in the context of a dynamic environment. There must be a more rapid response to the requirements generated by more complex weapon systems from a base characterized by decreasing CSS-related defense work for the industrial base, fewer manufacturing sources, and decreasing surge capabilities.in such areas as warehousing, maintenance, transportation, materiel management, and training. It will use electronic data interchange, electronic commerce, and other progressive business practices to effectively integrate with Army strategic CSS operations. The Army will be more heavily involved in joint ventures and co-production and will become more dependent on foreign nation support. Such initiatives, as well as routine operations, will be enhanced through a systematic program of benchmarking and adoption of effective commercial and governmental business processes.

(2) In response, the sustainment base must become increasingly seamless. Army strategic support elements will continue to forge strategic alliances with DOD, other services, and the private sector, and to integrate their activities into the strategic CSS planning process. The private sector will assume more functions.

(3) In a Force XXI environment, sustainment base components will measure performance in terms of meeting the needs of the combatant commanders. They will focus on minimizing response time. Total asset visibility initiatives and other components of distribution and velocity management programs will help reduce or compress response time. So will integrated sustainment maintenance (ISM). ISM will focus on centralized management and work-loading of all sustainment maintenance activities under a single manager. Its goal will be to maximize repair capability through integrated work-loading and management, and decentralized execution of total Army sustainment maintenance requirements.

c. Strategic deployment. Power projection is a fundamental principle of US national security strategy. Therefore, force projection will be fundamental to future Force XXI operations. The need for force projection requires support planners to structure support units with the capability of deploying the right amount of capability with the minimum force necessary to successfully accomplish the mission. The future CSS system will place a premium on efficiency without compromising effectiveness. The most effective mix of active and reserve components, DOD civilians, and private-sector contractor personnel will be assembled and deployed to sustain the force.

(1) The Army mobility requirement is to incrementally deploy five and one-thirds divisions and the required support structure from fort to foxhole in 75 days. Success in deployment is measured by meeting the CINC's requirement for combat power at the tactical assembly area within the CINC's established timeline.

(2) Force projection will dictate that CSS capabilities be sequenced into the AO. The CINC will seek to seize the initiative and to conduct successful decisive operations as quickly as possible using strategic lift assets efficiently. Planners must ensure that the CSS assets with adequate command and

control are included in the flow at the right time to support RSOI and sustain- ment operations as the force builds incrementally.

(3) Strategic deployment will include activities at Army posts, camps, and stations and will culminate with the discharge, reception, and onward movement of forces within the AO to be integrated into the in-theater force. Posts, camps, and stations must continue their development into becoming force projection platforms. Installations with deployable units must treat deployment as their primary mission, and the installations themselves must be equally as capable of short notice response as the force they support. Likewise, installations selected as RC mobilization stations must become launch platforms for their units and must respond with the sense of urgency the joint force commander requires. In addition, elements of the sustainment base which may be required to shorten the CSS pipeline by providing support within the AO must become and stay proficient in preparing for and conducting deployment. Containerization capabilities with accompanying asset visibility and the capability to handle and move containers to and within the AO will and maintain an integrated, balanced force of air, land, sea, and space assets. The ability to rapidly project power worldwide will depend on increased airlift capability, increased sealift surge capability, improved readiness and responsiveness of the ready reserve force, and increased prepositioning of heavy equipment afloat and on land. also continue to evolve. Deployability of all these elements and resources will be enhanced by continued improvements to the nation's infrastructure to speed up the fort-to-port process as well as the ability to load strategic transportation assets.

(4) The requirement will remain to develop prepositioned assets to assist in early sustainment of operations are configured to support selected force deployments. They are positioned in selected overseas regions for initial support and kept afloat for rapid response. War reserve assets are also stored in CONUS for reinforcement. The use of prepositioned ships, together with the reallocation of Army reserve stocks, will greatly increase the Army's ability to rapidly respond to contingency requirements.

(5) Strategic deployability will also be facilitated through the continued development of modular forces that can be more efficiently mobilized and deployed to minimize strategic movement requirements. Also, CSS elements will employ split based operations to minimize the size of the deployed CSS force. In addition, situational awareness integrated with operational plans will enable CSS planners to more specifically identify CSS force deployment requirements. Finally, this awareness, coupled with computer simulation models, will provide more accurate forecasts of sustainment support requirements which will minimize the support resources moved through the pipeline as well as the requirements for distribution assets to get them to the combatant command.

3-3. Operational CSS. Operational CSS ties tactical requirements to strategic capabilities in order to accomplish operational plans. Army support at this level is integrated into the total support required to conduct joint/multinational campaigns and other military activities within a joint operational area. As previously indicated, the seams separating operational CSS from strategic and tactical support are often indistinguishable and will become more so. Support personnel at this level must be cognizant of the supported CINC's theater strategic perspective as well as the requirements at the tactical level which must be the focus of operational CSS activity (fig 3-2).

a. Logistics preparation of the theater (LPT). One of the processes associated with situational awareness for CSS personnel is LPT. It is a wide-ranging process that involves the efforts of numerous CSS staffs and operators. It includes all the actions taken by CSS personnel to maximize the means of supporting the commander's plan. It involves anticipating requirements, identifying resources available to meet requirements, and taking the steps necessary to ensure the CSS system will be able to provide required resources on time. It takes into account survivability and security risks. It also includes

managing information on available supplies and services, theater infrastructure, existing support agreements and contracts, and prepositioned stocks. A single, up-to-date CSS database that can be accessed by operational CSS planners will improve the ability to identify all available resources and will minimize deployment of CSS assets. LPT also includes actions taken to enhance the theater's capability to receive, move forward, and sustain the force, and to conduct redeployment. Actions will typically include negotiating support agreements, contracting for supplies and services and executing existing CSS augmentation contracts under LOGCAP, selecting base sites and lines of communication (LOC), and improving base and LOC capabilities. Such activities will often require early deployment of tailored CSS elements from echelons above corps to perform these functions.

b. Support structures. To maximize support efficiencies, the Army will require an effective CSS command and control structure to integrate CSS functions at the operational level. The supported commander will require a tailorable early entry support force to provide required functional expertise plus command and control for support elements providing essential support during early stages of force closure. Support structures at the operational level must be capable of expanding from early entry modules to whatever sizes are required to support operations. They will effectively employ both active and reserve component elements and take advantage of split based operations, contracting, and HNS, as appropriate.

(1) Operational support forces will be jointly staffed as required to integrate support to and from other services. When designated by the CINC, they will provide common support to joint forces. They will also be prepared to interface with the support elements of allies and coalition forces, as well as other agencies, to synchronize support operations as appropriate.

(2) To smooth the seams between the operational and strategic levels, elements of the national sustainment base will deploy and be integrated into the operational-level support force. One such element is the Army Materiel Command's (AMC) logistics support element (LSE). The LSE is a flexible, civilian- dominant organization which will provide CONUS-base logistics and limited general support within the AO. It will supervise AMC elements as well as contractor activities, forward repair activities, and individual DA personnel in the AO. The LSE will also provide the single focal point in the theater responsible for central oversight management of LOGCAP in peacetime and upon deployment. The Defense Logistics Agency (DLA) will also support the CINC/joint task force commander as a member of the integrated support structure with a DLA contingency support team, much like the AMC LSE. This team will provide a point of contact for DLA supply support and distribution, as well as logistics services such as contract administration support and reutilization and marketing services. Other strategic agencies that may deploy elements as components of the integrated support force include the U.S. Transportation Command, the Defense Finance and Accounting Service, the U.S. Space Command, and the Army and Air Force Exchange Service.

(3) In many scenarios, operational and tactical support will also be provided by HNS, foreign nation support (FNS), and contractors. Efforts must be made to pre-negotiate HNS and FNS agreements that fulfill the CINC's requirements whenever support is available and reliable. Such support should be coordinated with other services and with allies/coalition partners to prevent competition for resources and to ensure the highest priority requirements are met. HNS may include function or area support, use of host nation facilities, or support from government agencies or host nation civilians or military units. Support will also be provided by DOD/DA civilians as well as contractors. For command and control purposes, DOD and DA civilians as well as some contract personnel may be assigned to operational support organizations, in many cases within the LSE. Support planners will also incorporate support provided through contingency contracting into the theater support plan. Contingency contracting may be used to bridge gaps that may occur before sufficient organic support units arrive in theater. It is also frequently an effective force multiplier for supporting forces throughout all phases of an operation. Such support may be through LOGCAP or through contingency contracts negotiated for that specific

operation. Under LOGCAP, the Army will do advance planning for the use of civilian contractors to augment the major command's or CINC's force during contingencies. As part of this program, the Army will maintain an umbrella contract designed for responsive and flexible provision of selected logistics and engineering services. With all contingency contracting, it will be critical to ensure that the efforts of all contracting personnel (from all Army elements, as well as those of other services and nations) are fully coordinated so that resources are attained economically and applied most effectively to meet the prioritized requirements of the joint/multinational force commander.

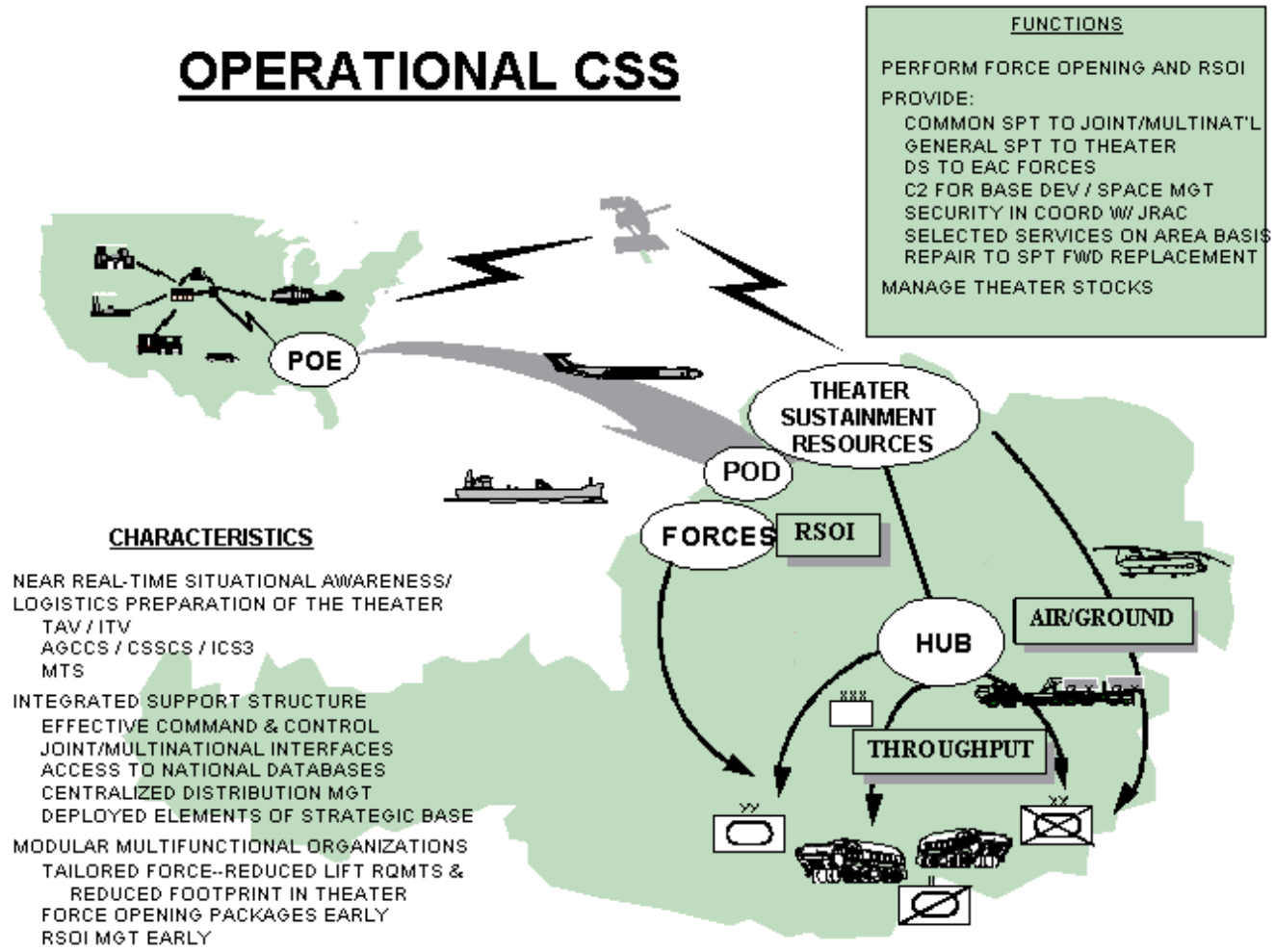


Figure 3-2. Operational CSS

c. Functions. Operational CSS elements provide support from reception in the AO through redeployment. Early entry modules with appropriately assigned organizational elements will be included in the theater force opening package as required. Early deployment of critical CSS functional and command and control (C2) capabilities will allow simultaneous RSOI and sustainment operations to begin when required. RSOI is composed of those essential and interrelated processes in the operational area required to transition arriving personnel and materiel into forces capable of meeting operational requirements.

(1) RSOI challenges will intensify as advances in strategic mobility capabilities allow the US to move more forces to ports of debarkation more rapidly. Development of efficient operational-level support structures and modular force-opening packages as well as in-transit visibility improvements will help meet the challenges. However, there will also be requirements to enhance status reporting procedures and to conduct more and better deployment simulations. Elements involved in RSOI must be fully prepared to operate in a joint, multinational, and civilian environment.

(2) The operational level of CSS will be the focus for the majority of general support operations on the Force XXI battlefield. The "hub" of the battlefield distribution system will be located at this level along with any deployed general support supply, sustainment maintenance, Level III medical (with in-theater hospital facilities), and personnel support elements. Direct support elements will also support forces operating in this area. Most stocks in support of the AO will be stored within the operational level, thus allowing the CSS units at the tactical level to be as mobile as the supported units. Total asset visibility will reduce CSS reaction time, lowering maintenance down time and stockage levels required on the battlefield. The in-transit visibility (ITV) piece of TAV will allow the centralized distribution manager at this level to redirect moving assets to weight the battle. Near real-time situational awareness provided through such systems as the Army Global Command and Control System (AGCCS), CSS Control System (CSSCS), and ICS3 will allow effective support. Support at this level will also include common support to joint and multinational forces as required.

3-4. Tactical CSS. Support personnel at the tactical level will operate at the end of the support pipeline to provide direct support to the battle commander. They will synchronize all the CSS activities required to sustain soldiers and their systems (fig 3-3). Their goal is to remove inhibitors to the tactical commander's scheme of operations.

a. Support structures. Military units organic to the deployed tactical force will continue to make up the bulk of the CSS structure at the tactical level. However, as at operational level, support may also come from the host nation, joint and multinational sources, DOD/DA civilians, and civilian contractors. Support forces will be austere, tailored, and multifunctional down to the appropriate level. Habitual relationships will continue to exist between support units and the units they support. The CSS command and control structure at each echelon will provide a support operations element to fully integrate CSS operations. Distribution management centers (DMCs) at each echelon will plan and coordinate the delivery of units, personnel, and materiel, as well as the transfer of maintenance workload among maintenance activities. These centers will be linked via an integrated communications network using automated information systems, automated identification technology, and voice systems.

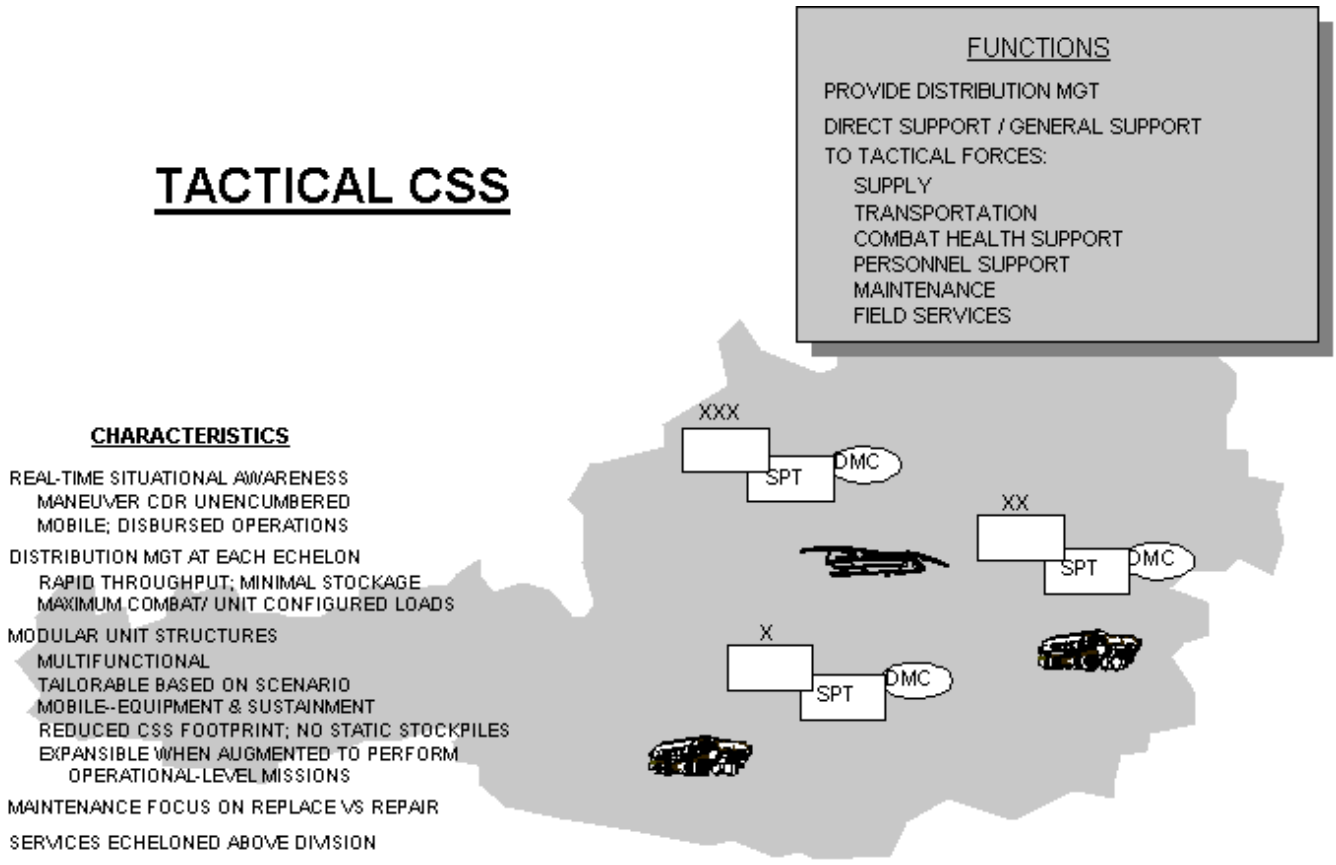


Figure 3-3. Tactical CSS

b. Functions and the role of technology. Tactical CSS elements will provide coordinated, tailored support for the warfighter. They will control austere inventories and the maintenance, transportation, personnel, medical, finance, and field service capabilities necessary to satisfy specific tactical requirements. Performance of these functions will be influenced dramatically by advances in information technology. These advances will influence CSS across all levels of war. At the tactical level, they will give the CSS manager the ability to anticipate, diagnose, and monitor the status of combat vehicle platforms via digitized information systems. The CSS manager will also be able to monitor and control the flow of support assets within his area of responsibility and back to their source. Finally, the support manager will have access to national-level data via intelligent networks and be able to exercise command and control over the entire CSS apparatus via the digitized information system. The objective is to maximize the capability of every individual involved in providing support at the tactical level. Timely and accurate reporting, coupled with visibility across the battlefield, will lead to efficient support provision and will help minimize supervisory redundancy. During operations, digital capabilities will minimize human intervention, yet allow the allocation of support at the appropriate place and time. Recovery and maintenance assets (with position location equipment) will be dispatched precisely to where they are needed. The evacuation of casualties will be directed to the medical facilities with sufficient capability and capacity. Elements providing personnel services will have access to national databases. CSS requirements will be specifically tailored to unit needs and sent to unit locations by effectively allocating available transportation assets.

3-5. Required capabilities. Many of the required capabilities have already been discussed in this concept and apply to multiple areas of CSS. These include such capabilities as enhanced ability to tailor and deploy CSS forces through methods such as modularity and split based operations; and improved situational awareness and CSS management capability through such means as integrated CSS automated systems, total asset visibility, and automated identification technology. Other capabilities are more specifically associated with particular functional areas. Some examples are discussed below.

a. Personnel support. Enhanced situational awareness through automation and communications systems as well as more tailorable organizations are required to provide support in future force projection operations. Though these operations will require an uninterrupted flow of skilled personnel to man systems, the Army will exploit technology to reduce personnel requirements on the battlefield across all functions, especially in administrative and management areas. Personnel service support will rely on support from the civilian sector to reduce the footprint on the battlefield. The system will also require access to distributed databases for soldiers to be able to receive personnel services down to the tactical level. Deployed personnel will require enhanced postal and morale, welfare, and recreation support during contingency operations. The postal system will be integrated into the distribution system to provide required improvements in visibility and effectiveness of postal movements. Financial management will be automated with real-time links to integrated service centers. It will require the capability to provide effective guidance, control, and accountability in a wide range of scenarios with complex financial conditions such as those inherent in joint and multinational operations. Tactical and operational finance elements will have to be able to provide effective support in environments that may involve extensive use of contracting and local purchase.

b. Combat health support. In the area of combat health support (CHS), improved organizational designs are required for 24-hour operations with reduced administrative overhead, a smaller footprint in the AO, and greater mobility. There is also a need to be able to deploy an early entry medical force to plan CHS in the AO and provide area support early on.

(1) Medical treatment will be provided by modular medical elements designed to perform specific battlefield functions. There will also be an increased requirement to project resuscitative surgery far forward due to extended distances. Veterinary services, dental, combat stress control, and laboratory services elements will be designed around modules for greater flexibility. Theater hospitals will be redesigned to enhance deployability and to decrease site limitations and sustainment requirements. Hospitals in the sustainment base will provide ultimate treatment for patients generated within the AO.

(2) A unit distribution system will push preconfigured medical supply and services as far forward as needed. State-of-the-art information and communications systems will facilitate TAV, automated transmission of optical fabrication requests, management of blood and blood products, management of medical equipment readiness, and management of captured enemy materiel and equipment. Also, using advanced technology, the disease surveillance system will coordinate health data from CONUS health facilities to the most forward medical treatment facilities in a joint environment.

c. Maintenance and explosive ordnance disposal. The Army will continue to provide maintenance support as close to the customer as possible and to support all customers within a given area.

(1) Maintenance will be performed at locations which have the capability to perform the mission as determined by the battle command logistician. The key is to be able to anticipate user requirements. The ultimate goal is to anticipate requirements and initiate responses before failure or shortages occur. Fielded systems will have to make maximum use of built-in test equipment, self-diagnostics, and self-repair, where possible. Quicker order-ship time performance for repair parts expanding on the improvements gained in the BD and VM initiatives will directly increase unit readiness. Increased usage of computers on the battlefield will require enhanced maintenance capabilities in that area.

(2) In the area of explosive ordnance disposal, the Army will require the capability to render safe systems which will have the ability to detect, identify, and select specific targets using infra-red, proximity, magnetic influence, acoustic, and seismic technologies. This will require application of robotics, advanced radiological systems, remote sensor detectors, remote neutralization measures, and many other technological advances.

d. Supply and field services. Implementation of the supply and services portion of the CSS concept will require new or improved capabilities in several areas including:

(1) Centralized distribution management.

(2) Automation, including automated identification technology, communications, and Army management information systems.

(3) Asset visibility, awareness of capabilities/capacities, and positive control.

(4) Tailored unit loads requiring minimum transshipment/handling in the pipeline.

(5) Modular CSS forces.

(6) Prepositioned resources. Individual areas of supply will require more specific capabilities. For example, in the area of ordnance, the strategic system will resupply technically advanced, lethal ammunition in mission-oriented preconfigured packages as far forward in AOs as possible. Improvements will also be required in Army capabilities in such areas as field sanitation, water

distribution, and tactical field exchanges to meet the needs of a force projected into potentially austere environments.

e. Transportation. A force projection Army depends on the ability to move rapidly and efficiently anywhere in the world. Strategic movement requirements are discussed earlier in this chapter. However, other transportation capabilities will also be required. These include more effective tactical mobility and improved capability to track transportation assets. Efficient force projection will also require the integration of port and movement control operations to achieve seamless information management in support of RSOI operations. Finally, this concept which relies so heavily on throughput, austere inventories, and rapid mobility of the supported force will require substantial transportation and cargo-handling assets within the AO as well as the capability to effectively control their movements.

Chapter 4
Implications

4-1. Doctrine.

a. Future CSS doctrine will be increasingly influenced by a number of factors, such as changing strategy, developments in human sciences, and information technologies. Information Age technology will have a profound impact on both the doctrinal process and, of course, the doctrine itself.

b. This concept will affect CSS doctrine at all levels. All Army CSS doctrine will have to be examined for necessary changes. Emerging concepts will require doctrine writers to update and modernize doctrinal publications to reflect the vision of CSS planners. CSS doctrine must provide common, unifying terminology and establish procedures that will facilitate task organization and the tailoring of CSS forces to support the full range of military operations and missions. CSS doctrine also must emphasize the joint and multinational nature of CSS operations and be consistent with emerging joint doctrine. Finally, it must cover CSS at all levels of war from tactical-level activities to the sustainment base.

4-2. Training.

a. Force XXI characteristics will necessitate a relook at the CSS training pillars of institution, unit, and self-development.

b. CSS forces require joint and multinational training programs to develop effective rapid deployment and sustainability capabilities at all levels. CSS units must continually train to operate in coordination with elements of other services, agencies, and nations. Joint and multinational training will ensure adequate knowledge of doctrine, tactics, techniques, and procedures of other services or countries. Common training in many CSS skills, especially for support to joint operations, must be a routine part of the CSS force training. The use of simulations, models, and other training exercises should be maximized. Simulations should use the same automation and communication systems used by support personnel whenever possible.

4-3. Leader development.

a. CSS leaders will be trained at all levels to adapt to the changing global situation. Like all other Army leaders, CSS leaders will be trained and developed under conditions that approximate projected operational environments and will encounter conditions that frequently change and become

progressively more difficult. CSS leaders will aggressively train in the joint environment and assess requirements for multinational training on a routine basis. A heavier reliance on the industrial base suggests that the services combine and expand the Training with Industry Program.

b. Quality soldiers and confident, competent leaders will remain the Army's most valuable, yet perishable asset. Premium leader development will ensure the U.S. Army remains the world's dominant land power and a viable component of the nation's strategic force.

4-4. Organizations.

a. The future Army will be smaller, yet have new, expanded, and diverse missions in an unpredictable rapidly changing world environment. These factors mandate changes to the way the Army organizes. CSS organizations will be modular, tailorable, and flexible to support future Army operations. Organization design must facilitate operations in a split based configuration and employ Information Age technologies to produce the optimal seamless soldier and weapon support system.

b. The ability to tailor CSS forces with the necessary capabilities is essential. The CSS force structure must be totally responsive to the joint/multi-national force commander. The support will grow from a nucleus of established CSS functional capabilities to meet the requirements of the supported force. As the deployed force grows, the CSS structure will gain required functional capabilities and expand. These CSS forces will be modularly designed, which should make them more agile, more capable, and easier to be trained.

c. The CSS system must be tailored across the joint/multinational and commercial spectrum. Force tailoring is a function of logistics preparation of the theater, which includes the identification of mission, enemy, terrain, troops, and time available (METT-T), determination of strategic lift availability, evaluation of prepositioned assets and an analysis of host nation support capability. Key considerations are the selection of an appropriate force mix for the mission and the sequencing the flow of forces to permit simultaneous deployment, employment, and sustainment. The CSS force must be capable of integrating support with all other providers and receivers of CSS IAW support agreements, contractual arrangements, and CINC directions.

d. Digitization of the battlefield and other advances in information technology will result in smaller CSS staffs and highly mobile command posts at all levels of command.

4-5. Materiel.

a. The Army must continue to explore technological opportunities to design, acquire, and field more capable weapons systems and support systems to achieve higher productivity and a more efficient and effective force.

b. Split based operations, total asset visibility, telemetry to allow anticipation of requirements, containerization, and improved automation and communications will provide flexible, prompt, and efficient support. Increases in system reliability and modular packaging of support resources will be based on METT-T. The development of a capability for remotely operated, teleoperated, and autonomous robotic ground vehicles to perform a variety of missions will enhance the CSS system's ability to support the force. Enhancements may include improvements in acquisition, refueling, rearming, distribution, materials handling, environmental sensing, and route planning.

c. The Army must develop the command, control, communications, computers, and intelligence operational and system architecture that support split based operations and the technical architecture (TA). The architecture must encompass interoperability among the Army's operational and sustainment base components. The design must be IAW the Army TA and the joint TA to ensure seamless communication.

d. The Army must design equipment to operate more efficiently. Reducing ammunition, fuel, and maintenance requirements will assist in decreasing CSS requirements for combat forces. Initiatives to reduce diversity of support requirements (such as a single fuel on the battlefield) will also result in efficiencies. Enhanced built-in testing and predictive failure diagnostics capabilities will allow more efficient stockage of repair parts and components.

4-6. Soldiers.

a. Quality soldiers, trained and led by competent and caring leaders, will remain key to the Army's success. CSS soldiers in the Twenty-First Century will be faced with a wide variety of challenges in preparing for and executing the mission in full-dimensional operations.

b. Prompt, responsive provision of soldier sustainment items like rations, water, protective clothing, and shelter is required to help maintain high morale among soldiers. The Army must continue to improve morale and welfare support for deploying soldiers. Such support includes postal and legal support, laundry/shower capabilities, and family support systems. The health of the soldier must be maintained at the highest level.

c. The Army must take significant measures to ensure the health and operational effectiveness of soldiers. This reduces the burden on the personnel replacement system, the medical system, and the training base, and allows a sustained high operational tempo. This should be accomplished by placing emphasis on safety equipment and procedures, preventive medicine techniques, and analyses of methods for maintaining optimal performance.

Glossary
Section I
Abbreviations

ABCS	Army Battle Command System
AGCCS	Army Global Command and Control System
AMC	United States Army Materiel Command
AO	area of operations
AOR	area of responsibility
ARPERCEN	Army Reserve Personnel Center
BD	battlefield distribution
C2	command and control
CD	coordinating draft
cdr	commander
CHS	combat health support
CINC	Commander in Chief
COE	Corps of Engineers
CONUS	continental United States
coord	coordination
CSS	combat service support

CSSCS	Combat Service Support Control System
DA	Department of the Army
DCA	Defense Contracting Agency
DECA	Defense Commissary Agency
DFAS	Defense Finance and Accounting Service
DLA	Defense Logistics Agency
DMC	distribution management center
DOD	Department of Defense
DOT	Department of Transportation
DS	direct support
DTLOMS	doctrine, training, leader development, organizations, materiel, and soldiers
EAC	echelons above corps
FEMA	Federal Emergency Management Agency
FNS	foreign nation support
fwd	forward
FY	fiscal year
GCCS	Global Command and Control System
govt	Government
HNS	host nation support
IAW	in accordance with
ICS3	Integrated Combat Service Support System
ISM	integrated sustainment maintenance
ITV	in-transit visibility
JRAC	joint rear area coordinator
LOC	lines of communication
LOGCAP	logistical civil augmentation program
LPT	logistics preparation of the theater
LSE	logistics support element
MARAD	Maritime Administration
MEDCOM	United States Army Medical Command
METT-T	mission, enemy, terrain, troops, and time available
mgt	management
MTS	Movement Tracking System
opn	operation
PERSCOM	United States Total Army Personnel Command
POD	port of debarkation
POE	port of embarkation
prepo	prepositioned
RC	Reserve Component
rqmts	requirements
RSOI	reception, staging, onward movement, and integration
spt	support
TA	technical architecture
TAV	total asset visibility
TRADOC	United States Army Training and Doctrine Command
U.S.	United States
USACASCOM	United States Army Combined Arms Support Command

USTRANSCOM	United States Transportation Command
VA	Virginia
VM	velocity management

Section II
Terms

Automated identification technology
A family of technologies that support source data automation through various media to facilitate the rapid collection, consolidation, storage, and retrieval of data to and from Army management information systems.

Battlefield distribution
A holistic methodology involving information exchanges, management procedures, functional designs, and reengineered operational processes which enable U.S. forces to properly request, receive, redirect, track, distribute, control, and retrograde personnel, units, materiel, facilities, and services within a single distribution system.

Combat service support
The essential capabilities, functions, activities, and tasks necessary to sustain all elements of operating forces in theater at all levels of war. Within the national and theater logistic systems, it includes but is not limited to that support rendered by service forces in ensuring the aspects of supply, maintenance, transportation, health services, and other services required by aviation and ground combat troops to permit those units to accomplish their missions in combat. Combat service support encompasses those activities at all levels of war that produce sustainment of all operating forces on the battlefield.

CSS pipeline
A distribution network integrating all the resources required to extend support from the sustainment base to the warfighting elements.

Foreign nation support
Identification, negotiation, and procurement of available resources within a foreign nation to support U.S. military missions.

Full-dimensional operations
The application of all capabilities available to an Army commander to accomplish his mission decisively and at the least cost across the full range of possible operations.

Host nation support
Civil and/or military assistance rendered by a nation to foreign forces within its territory; assistance provided during operations based upon agreement mutually concluded between nations.

Integrated Combat Service Support System
The system to establish the overall architecture and needs for CSS automation and communications. It will integrate CSS automation and supporting communications into a single, responsive, and seamless configuration.

Integrated sustainment maintenance
Centralized management and work-loading of all sustainment maintenance activities under a single manager.

Interagency operations
Military operations conducted in conjunction with nonmilitary organizations: agencies of the U.S. Government, nongovernmental organizations, and/or private volunteer organizations.

In-transit visibility
The immediate access to data pertaining to the location of equipment, supplies, and other resources in transit from the provider to the requester.

Logistics civil augmentation program
A program, regulated by AR 700-137, to preplan for the use of civilian contractors to perform selected support functions during contingency operations to augment Army forces. It includes the option for supported commanders to purchase specific services during operations through a pre-existing umbrella contract.

Logistics preparation of the theater
All the actions taken by CSS personnel to maximize the means of supporting the commander's plan.

Logistics support element
A flexible, civilian-dominant organization which provides CONUS-base logistics and limited general support within thearea of operations. The table of distribution and allowances for this organization is maintained by AMC.

Modularity
A force design methodology that establishes a means to provide interchangeable, expandable, and tailorable force elements.

Multinational operations
A collective term to describe military actions conducted by forces of two or more nations typically organized within the structure of a coalition or alliance.

National providers
The national-level capabilities to manage, resource, and control the materiel management, maintenance, services, procurement, distribution, and deployment functions for the Army and other joint and multinational customers. This involves the integrated efforts of a number of national strategic-level CSS organizations.

Ready reserve force
Quick response ships in the national defense reserve fleet, maintained in a high state of readiness by the Maritime Administration for activation in 5, 10, or 20 days.

Split based operations
Operations in which routine CSS management functions are accomplished in CONUS or at home station while critical field functional capabilities are projected forward.

Total asset visibility
The immediate access to data pertaining to the location of aircraft, ships, trucks, and trains moving equipment, supplies, and other resources from the provider to the requester.

Velocity management
A family of initiatives to get support into the hands of the soldier as fast as any first-rate commercial

firm, while providing a hedge against unforeseen interruptions in the CSS pipeline. It seeks to eliminate sources of delay and undependability in the Army's CSS processes.

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ANEXO H

SUSTENTAÇÃO E MANUTENÇÃO INTEGRADA

Department of the Army
Headquarters, United States Army
Training and Doctrine Command
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TRADOC Pamphlet 525-81

3 August 1998

Military Operations

INTEGRATED SUSTAINMENT MAINTENANCE

Summary. This pamphlet provides the initial framework for systemic solutions to doctrine, training, leader development, organizations, materiel, and soldier and civilian requirements for future sustainment maintenance operations. Integrated Sustainment Maintenance (ISM) links the sustainment maintenance (general support (GS) and depots) capabilities and capacities to tactical operations by providing a single maintenance manager to support the Commander in Chief (CINC) requirements.

Applicability. This pamphlet applies to DOD activities, Active/Reserve Component (AC/RC), civilians, contractors, and depots that provide sustainment maintenance in contingency operations.

Suggested improvements. The proponent of this pamphlet is Commander, U.S. Army Combined Arms Support Command (CASCOM). Send comments and suggested improvements on DA Form 2028 (Recommended Changes to Publications and Blank Forms) through channels to Director for Combat Developments, Ordnance, USACASCOMFL, ATTN: ATCL-O, 3901A Ave, Ste 250, Fort Lee, VA 23801-1809. Suggested improvements may also be submitted using DA Form 1045 (Army Ideas for Excellence Program (AIEP) Proposal).

Availability. This publication is also available on the TRADOC Homepage at http://www-tradoc.army.mil.

Chapter 1
Introduction

1-1. Purpose. This document describes Integrated Sustainment Maintenance (ISM), a Headquarters, Department of Army (HQDA) initiative to streamline sustainment maintenance performed on Army/non-Army components and end items (less medical) above the direct support level during Army supported operations.

1-2. References. Appendix A contains the required and related publications.

1-3. Explanation of abbreviations and terms. The glossary contains abbreviations and special terms used in this pamphlet.

Chapter 2
Overview

2-1. Why the Concept Is Needed.

a. Current sustainment maintenance (GS and depot) doctrine does not allow maximum flexibility for integration of sustainment capabilities throughout the Army. It is fragmented and duplicative, and there

is no single Army maintenance organization with visibility or responsibility for managing sustainment maintenance. Contingency operations place unique stresses on the maintenance system. Generally these operations require tailored mixes of sustainment personnel, not battle rostered, for a specific operation. Operation Desert Shield/Desert Storm (ODS/S) accentuated the fragmented nature of peacetime control of sustainment activities. Theater planners at the U.S. Central Command (CENTCOM) were unable to pass their support requirements to a single Army element. Instead, CENTCOM staff coordinated sustainment maintenance requirements with the Army staff, Forces Command (FORSCOM), Army Materiel Command (AMC), other Major Commands (MACOMs), National Guard Bureau (NGB), and Office of Chief, Army Reserve (OCAR). Deployability of sustainment maintenance units presented a series of challenges. Challenges inherent in mobilizing and deploying such units did not end upon arrival in Southwest Asia (SWA). Because of differences in assigned equipment and weapon systems, Reserve Component (RC) units often lacked experience to repair equipment organic to active component units. These same challenges continued with other contingencies in Somalia, Haiti, and Bosnia. Much of the peacetime GS capability is provided by Table of Distribution and Allowance (TDA) organizations at Active Component (AC) installations, Combined Support Maintenance Shops (CSMS), Mobilization and Training Equipment Sites (MATES) with Support, and other activities of these types. These activities are not deployable and their equipment and skilled personnel may not be available in a theater of operations. In addition, over 80 percent of the Army's GS maintenance units reside in the RC. As the Army continues to draw down its forces, its mission will not decrease. The Army must redesign organizations to meet sustainment maintenance requirements. Access to all sustainment capabilities that can be tailored to support future military operations is imperative.

b. The future Army, Army XXI, must be prepared to face the full spectrum of operational environments ranging from SASOs to war. The Army must design organizations and develop capabilities to be rapidly tailorable and expansible. They must be strategically deployable and effectively employable as part of a joint or multinational team capable of a rapid and decisive victory across the operational continuum. As Army XXI develops to accommodate the challenges of a new strategic and operational environment, the Army must revise support concepts and redesign the force at all echelons to integrate necessary AC/RC, civilians, and industrial base capabilities.

2-2. Background. The ISM concept began as a HQDA Deputy Chief of Staff for Logistics (DCSLOG) initiative in Dec 91. The original concept called for the ISM structure to be located in the AMC which would have been assigned the responsibility for controlling and managing all the personnel (Active, Reserve, DOD civilians, DOD contractors), equipment, and facilities required to provide sustainment maintenance whether in garrison or deployed. A derivative of this concept was tested in 1993 within III Corps. Local sustainment maintenance management (LSMM) offices were established at Forts Hood, Riley, Carson, and Texas National Guard (NG) MATES with support. The 238th GS Maintenance Co., a reserve unit, was workloaded by AMC. The first test placed the Regional Sustainment Maintenance Manager (RSMM) in 13th Corps Support Command (COSCOM), III Corps, to workload the region with little involvement from AMC. The demonstration proved its worth and FORSCOM adopted this derivative of the original concept as the Corps Managed Regional Repair Program (CMRRP). Later in 1994, it was decided to expand to other MACOMs, AMC, FORSCOM, TRADOC, NGB, OCAR, to demonstrate crossing MACOM lines. Again, the test proved worthwhile and in Feb 96, a 12-star review, consisting of the Commanders of FORSCOM, TRADOC, and AMC, recommended implementing ISM Army-wide to the Chief of Staff, Army (CSA). The Army leadership approved ISM implementation in May 96. It is projected that by 4th Qtr FY 98, AMC will staff and manage the national and regional levels with MACOMs staffing and managing the local levels. This transition is based on the assumption that all specified "enablers," as defined by the MACOMS, are in place to support full ISM implementation. References used to develop the contingency concept are contained in appendix A.

2-3. Threat.

a. Deterring and defeating aggression in major regional conflicts. U.S. forces must be capable of off-setting the military power of regional states whose interests oppose those of the U.S. and its allies. The U.S. (in concert with regional allies) must be able to deter and, if necessary, defeat aggression by projecting and sustaining U.S. power in two nearly simultaneous major regional conflicts.

b. Providing credible overseas presence. Some U.S. forces must be forward deployed or stationed in key overseas regions in peacetime. These deployments will contribute to a more stable and secure international environment by demonstrating U.S. commitment, deterring aggression, and underwriting important bilateral and multilateral security relationships. Forward stationing and periodic deployments will also permit U.S. forces to gain familiarity with overseas operating environments, promote joint and multinational training among friendly forces, improve inter-operability with friendly forces throughout the world, and provide a capable response to crises.

c. Conducting military operations. The U.S. must be prepared to, operate in the full range of military operations. These include SASOs.

d. Countering weapons of mass destruction (WMD). While the U.S. is redoubling its efforts to prevent the proliferation of WMD, military capabilities must be improved to deter and prevent the use of these weapons. The U.S. is pursuing this objective by maintaining adequate retaliatory capabilities and by increasing capabilities to defend against WMD.

2-4. Capstone concept. The ISM concept supports the capstone concept of TRADOC Pamphlet 525-5, FORCE XXI Operations, by providing tailorable, modular, strategically deployable sustainment maintenance capabilities necessary to support the warfighter in any operational environment.

2-5. Joint concepts. ISM also supports Concept for Future Joint Operations 2010.

2-6. Other concepts. In developing the ISM concept, the following TRADOC approved concepts in TRADOC Pamphlet 25-30 were reviewed: TRADOC Pamphlet 525-77, Battlefield Distribution, and TRADOC Pamphlet 525-53, Concept for Service Support.

2-7. Assumptions.

a. Strategic planning guidance will continue to articulate a force projection strategy, maintain a limited overseas force presence, and require DOD participation in major regional conflicts.

b. Future logistics operations will continue to be joint and/or multinational in nature, requiring a logistics system to support combined and joint operations.

c. The Army's long term goal will remain a seamless logistics system that provides common item support in a theater of operations. This system will --

(1) Feature a single stock fund that integrates the current wholesale and retail stock funds.

(2) Include standard processes, automation, data, and compatible standards of performance as part of an integrated whole.

(3) Integrate the industrial base, DOD civilians, Defense Logistics Agency (DLA), DOD contractors, and the private sector.

d. The AC will continue to rely on RC logistical capabilities to support combat operations and SASOs. Since the RC will continue to maintain a significant portion of the Army's logistics force structure, it will require training on new equipment and technologies.

e. Pressure on the Defense Department to outsource support will continue.

f. Total asset visibility (TAV) and in-transit visibility (ITV) will allow many functions to be centralized and will improve current levels of support. This visibility combined with accelerated delivery techniques such as velocity management (VM) and direct vendor delivery will reduce authorized stockage list (ASL) requirements.

g. The Army's long term goal will remain the development of predictive models to forecast deployment and high operational tempo (OPTEMPO) consumption requirements, thereby allowing maintenance activities to meet repair requirements.

h. Future deployments will not be characterized by logistics push operations. Pushing supplies based on inadequate modeling generates excess. Supplies cannot remain where delivered, wasting transportation assets and creating redeployment requirements.

i. ISM will be fully implemented and functional across all Army components.

2-8. Limitations. The ISM concept will be limited by:

a. Lack of standardized and integrated maintenance and supply automated systems to provide horizontal and vertical visibility of maintenance capability and capacity at the local, regional, and national levels to meet commanders' priorities in the short/mid term.

b. Inadequately trained personnel (learning curve).

c. Short/Mid term lack of enablers to predict repairs and workload.

d. Inadequate communications which could impact on maintenance management automation requirements, TAV, ITV, situational awareness, and split-based operations.

e. Inadequate transportation assets.

f. Lack of infrastructure to support sustainment maintenance operations i.e., buildings, roads, power, and utilities.

g. Inadequate or no host nation support.

Chapter 3
Concept

3-1. General. Sustainment maintenance refers to all maintenance performed on Army/non-Army equipment above the direct support maintenance level. It includes maintenance performed by AC/RC GS maintenance units, non-divisional aviation intermediate maintenance (AVIM), TDA maintenance activities, depots, specialized repair activities (SRAs), forward repair activities (FRAs) and contractors who operate out of fixed or semi-fixed facilities. These activities must provide the same or expanded sustainment maintenance capabilities during contingency operations. Their primary mission is to repair and return materiel to the supply system. Secondary missions include providing backup direct support to supported units, training of both military and civilian personnel in select skills, and supporting other DOD, governmental and non-governmental agencies, and coalition forces in theater.

3-2. Definition of Integrated Sustainment Maintenance.

a. ISM focuses on centralized management with decentralized execution of all Army sustainment maintenance activities less medical. This management strategy is achieved through management consolidation of all sustainment maintenance activities under an integrated structure. The goal of the

ISM initiative is to optimize the total Army sustainment maintenance capability to support the warfighter's OPTEMPO requirements during peacetime, SASOs, and war. The objectives of the ISM concept are:

(1) To provide maximum effective sustainment maintenance support to total Army logistics operations.

(2) To provide visibility over total Army sustainment maintenance capability and capacity.

(3) To increase flexibility to balance and reallocate sustainment maintenance workload and to meet unprogrammed/surge requirements.

(4) To achieve maximum cost effectiveness in accomplishing sustainment maintenance operations by adopting a "repair more, buy less" philosophy; consolidating or eliminating duplicate sustainment maintenance infra-structure; establishing consistent charge rates based on actual costs of doing business.

b. Under ISM, the Army is implementing a maintenance program that will result in efficiencies/economies in peacetime and has the flexibility to fully support contingency operations. Although ISM is still an evolving concept, it currently offers a streamlined structure that features:

(1) National, regional, and local levels that coordinate repairs to ensure efficiencies are achieved and duplications minimized.

(2) Automated interface between participating activities.

(3) Operational structure that accommodates mobilization, deployment, and split-based operations.

(4) A management support structure for theater operations to complement the Logistics Support Element (LSE) mission.

3-3. How ISM works during peacetime operations. The ISM management structure is depicted in Figure 3-1.

a. Currently, select TDA organizations (both AC/RC) have designated a LSMM with responsibilities to consolidate, integrate, and standardize local sustainment maintenance functions and optimize local savings/cost avoidance. The LSMMs have workloading responsibility for all Army sustainment maintenance units and activities in their local areas for component and/or end item repair. The LSMMs develop maintenance programs in conjunction with supply requirements to meet readiness/sustainment demands and training requirements which are passed to the RSMM for consolidation. Once the RSMM approves the maintenance program, selected LSMMs execute the programs by workloading internal maintenance activities or associate maintenance activities (AMAs) under the LSMM's workload authority. The LSMMs may also perform component or end item repair for the national level. Reparable component and end item maintenance requirements beyond individual LSMM capability or capacity are elevated to the RSMM for decision to redistribute workload or request assistance. Select TDA activities have a supporting role in unit deployments. They provide materiel supply, and maintenance support to accomplish the mobilization process based on priority of deploying units. The LSMM may be called upon to assist in unit training, mobilization, and deployment as well as providing sustainment maintenance support to deploying forces whether AC or RC. Through the ISM management structure, the LSMMs may assist units in bringing their equipment to appropriate maintenance standards during redeployment.

b. RSMMs prioritize and redirect the workload among LSMMs and develop regional reparable programs tailored to optimize weapon system availability to supported customers, promote cost

avoidance, and support training requirements. By consolidating regional requirements for low density equipment at the regional level, the RSMM is able to establish enough volume to support a repair program. RSMMs manage any shortfall or excess in LSMM capability/capacity by cross-leveling, reassigning workload, or elevating requirements to the national level.

c. The national sustainment maintenance manager (NSMM) located at the Industrial Operations Command (IOC) plays an important role in planning, developing, coordinating, and integrating sustainment maintenance operations for the Army during peacetime and contingency operations. At the national level, requirements are identified through repair or buy decisions for reparable items. In conjunction with the RSMM Office, the NSMM can provide item managers at the national inventory control points (NICPs) information that can assist them in repair and buy decisions that reduce unnecessary procurement of new assets and maximize cost avoidance. Future plans call for the NSMM to maintain oversight of national, regional, and local sustainment maintenance contracts for possible consolidation to reduce duplicate and redundant acquisition of repair/spare parts and services. By maintaining visibility of maintenance capacity and capability in the various regions, the NSMM may recommend distribution of national workload to improve capacity utilization. The NSMM assists regional and national agencies in resolving line stoppers and quality deficiency reports. In coordination with NICP item managers and MACOMs, the NSMM provides national level unserviceable assets to the regions to meet AC/RC training requirements.

d. Each region is organized to support the sustainment maintenance requirements of its customers. Regions may be designated to accommodate some of the demands placed on the national level sustainment maintenance system, as coordinated by the NSMM and RSMMs. In addition to regional and national (depot and contractors) capacities and capabilities currently available, the NSMM may seek to outsource additional requirements to accommodate contingency operations.

3-4. ISM during contingency operations.

a. Theater campaign plans are designed to conduct a series of related military operations to achieve strategic objectives in a given time and area. Through the theater campaign plan, the CINC defines theater tactical objectives, describes the tactical concept of operations and sustainment, allocates subordinate forces, establishes command relationships, sequences unified operations, integrates and synchronizes unified, joint, and multinational logistics and support operations. The CINC determines support requirements to include sustainment maintenance based on a combination of strategic factors. Some of these factors are:

(1) Size of the operation and force to be supported; costs; duration; size/make-up of the theater support base.

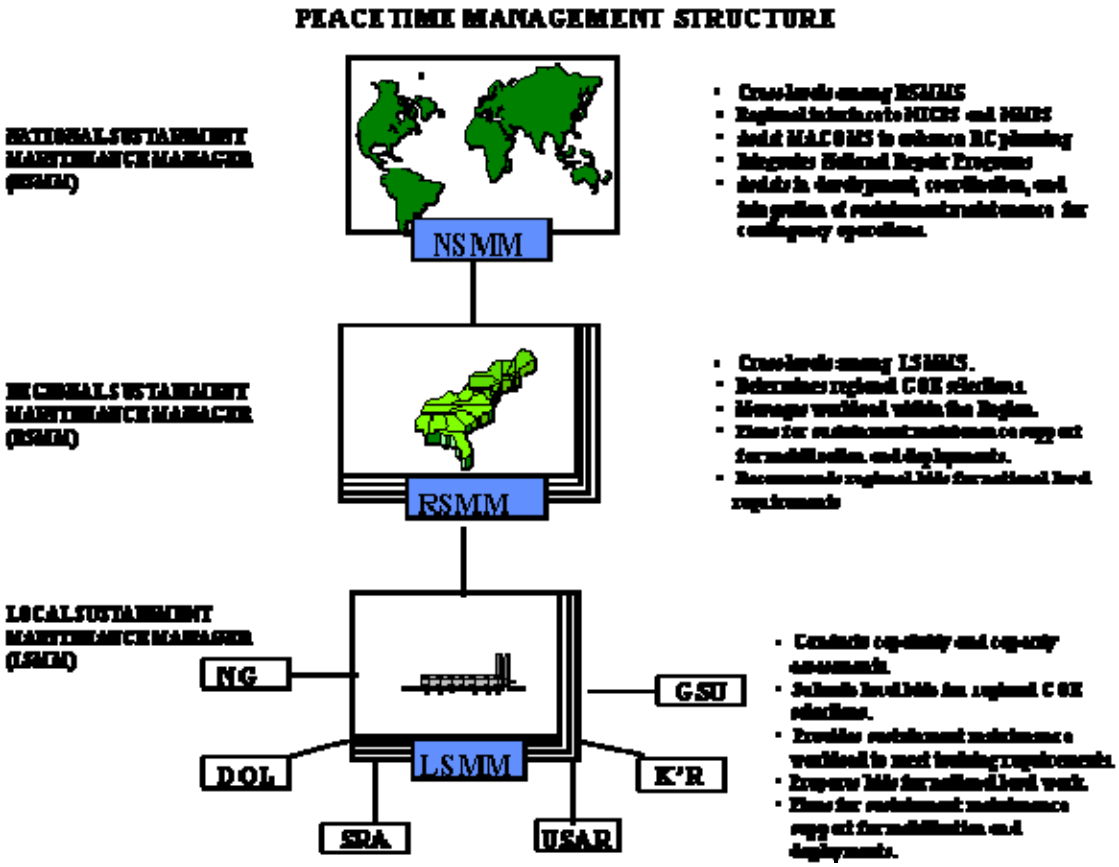

Figure 3-1. Peacetime Management Structure

(2) RC mobilization; country cap; projected equipment densities; unusual or non-standard items of equipment to be supported.

b. The Army's missions require sustainment maintenance capability through the entire range of contingency operations. During mobilization for contingency operations, the theater support structure focuses on two support missions:

(1) Adjusting sustainment maintenance capabilities to deploy force projection forces to theater.

(2) Ensuring when the force arrives, sufficient assets are available to provide materiel from war reserves and host nation equipment.

c. When the CINC and the Army Service Component Commander (ASCC) require a tailorable logistics command and control (C2) element of the national base, to include sustainment maintenance capabilities, the Theater Support Commander (TSC) identifies combat service support (CSS) force requirements and assigns tasks and priorities. The TSC serves as the single point of contact for the execution of support operations to receive, move, sustain, reconstitute, retrograde, and redeploy forces. The TSC will command and control assigned and attached units who support U.S. Army units, other services, DOD civilians, and contractors and may provide support to allied forces in theater. The NSMM, who has visibility of the capabilities and capacities of sustainment maintenance assets, can recommend an ISM support structure to provide required sustainment maintenance management functions, expanded national (depot) and backup maintenance support, and technical assistance to the TSC (See Figure 3-2). When mission, enemy, terrain, troops and time (METT-T) available conditions warrant, elements of a TSC will be deployed to the area of operations. The TSC structure is designed to take full advantage of modularized and flexible units designed to match incremental functional support

capabilities to mission requirements. Modular designs enhance the early arrival of echelons above corps (EAC) support capabilities. Personnel from strategic level organizations are battle rostered as insertions to the TSC. As part of that modularized force, the LSE ISM support structure can be provided to the TSC to perform sustainment maintenance management functions throughout the theater.

d. During deployments supported by split-based operations, a portion of the materiel management section will be deployed to coordinate maintenance management for the theater or corps, depending on the size and duration of operations. The Corps Materiel Management Center (CMMC) deploys a Materiel Management Team (MMT) for each deployed Corps Support Group (CSG). The CSG will normally be in support of a maneuver division. The MMT can perform CMMC item manager and liaison functions between the CSG and supported customers. The CMMC rear element, based in CONUS, will perform nontime sensitive management functions. The CMMC is a customer of the ISM program and does not perform repairs for the ISM program. Doctrinally, there are no sustainment maintenance units assigned to a CMMC or a Corps. Sustainment maintenance units are theater assets.

e. The NSMM has several key roles to ensure full support to deployed activities and continued support to the affected CONUS regions. These roles include:

(1) Providing recommended source of repair to meet additional requirements for mobilization, deployment, and SASOs.

(2) Providing battle-rostered personnel, trained and prepared to deploy as part of the ISM management structure. This includes automation necessary to perform the mission.

(3) Providing an expanded repair focus to the TSC.

f. An LSE may play a vital role in all types of contingency operations. It is typically deployed with a TSC and operates as far forward as METT-T permits. The NSMM may provide the LSE an ISM cell with an automated capability to provide visibility of sustainment maintenance capabilities available to the TSC. If requirements dictate an in-theater ISM program, a RSMM may be established to coordinate maintenance requirements. The deployed structure falls under the operational control of the TSC with a direct link to the NSMM in CONUS. The LSE’s ISM element will perform the following key missions and functions:

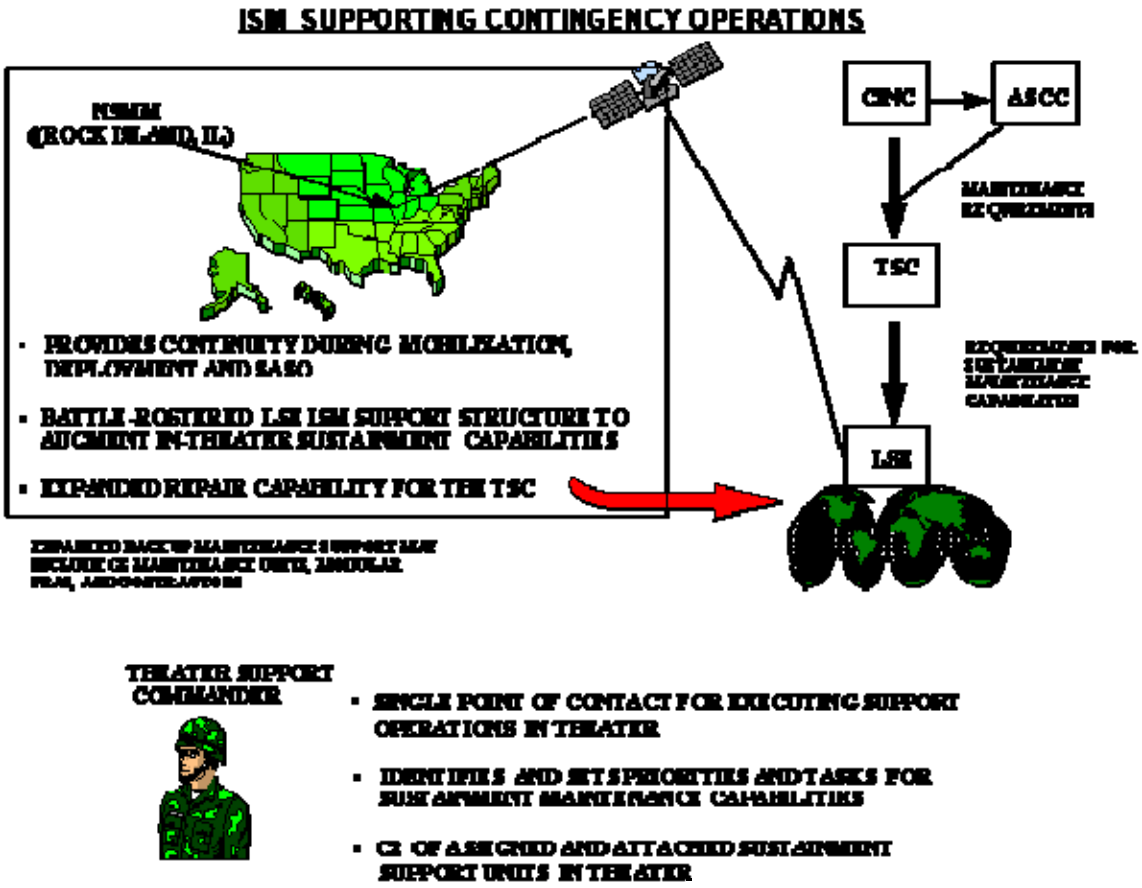

Figure 3-2. ISM Supporting ContingencyOperations

(1) Gain and maintain visibility over all sustainment maintenance work being performed in theater, on prepositioned ships, and war reserves regardless of component or branch of service.

(2) Determine surge capability within the theater's sustainment work centers/ maintenance activities.

(3) Workload GS maintenance units, FRAs, and contractors and provide maintenance teams (depot and contractor support) as far forward as possible to enhance/ reinforce maintenance support to the combat units.

(4) Coordinate with the NSMM to identify work that cannot or will not be accomplished in theater and coordinate shipment of unserviceables to the appropriate repair activity.

(5) Coordinate contractor technical assistance.

(6) Participate in planning for reconstitution operations in theater.

(7) Designate provisional COEs as required to support mission requirements.

Note: Figure 3-3 shows how the operations discussed above could operate in any environment.

LSE ISM SUPPORT STRUCTURE

1. HAS VISIBILITY OF ALL SUSTAINMENT MAINTENANCE IN THEATER

2. DETERMINES THEATER SURGE CAPABILITY

3. WORKLOADS GS MAINT UNITS, FRAs, CONTRACTORS

4. PROVIDES MAINT TEAMS FORWARD FOR BACKUP SUPPORT

5. COORDINATES WITH THE NSMM SHIPMENT OF UNSERVICEABLE ASSETS TO CONUS REPAIR ACTIVITIES IF NOT REPAIRED IN THEATER

6. AS REQUIRED, ASSISTS IN THEATER RECONSTITUTIONS EFFORTS

Figure 3-3. ISM Contingency Concept

g. The METT-T will determine where repairs will be accomplished. Key tools the ISM element will use to maintain visibility of capacity and capability of the sustainment maintenance activities are the various STAMIS for supply and maintenance management. In support of repair programs, the NICPs and the NSMM work together to stage component/repair parts for shipment to the theater, maintain visibility of assets while in transit using TAV, and distribute components within theater using battlefield distribution.

h. Theater redeployment requires an extensive reallocation of resources and skills. The ISM management structure can assist in providing additional sustainment maintenance capabilities as required to bring redeploying units' equipment to appropriate maintenance standards. The disposition of the redeploying equipment drives how the LSE executes the operation. Items may be repaired in theater or retrograded. If the deployment is to another theater of operation, the equipment will be returned to appropriate maintenance standards. If equipment is turned over to the host nation, equipment condition will be restored as per the agreement between the host nation and the U.S. If no LSE is deployed to assist in or execute the operation, the TSC will coordinate with in-theater assets or contractor support to perform these responsibilities.

i. In many SASOs, it is conceivable that a full TSC structure is not warranted to meet mission requirements. In these cases, an LSE may be established within the area of operations that would control other DOD elements, assuming all logistical responsibilities to support the deployed commander. If required, the NSMM may provide an ISM support cell to the LSE with an automated capability to provide visibility of sustainment maintenance.

j. The NSMM may be required to provide sustainment support of reparable components or end items to foreign countries that bought equipment through foreign military sales.

3-5. Future Operational Capabilities (FOCs). The following are the future operational Capabilities required to successfully accomplish ISM enhancements to Army XXI.

IS 97-001: Client/Server Automation System

Description: Capability to quickly establish a client/server automation system in CSS at echelons Battalion and above. System will need to provide for Data Warehousing, communications in the warfighter information network (WIN), and CSS automation. Will provide an integration of (or seamless access to) existing logistics Standard Army Management Information System (STAMIS).

IS 97-002: Wireless Communications Capability

Description: Capability to quickly establish a network of CSS computers using wireless communications technologies. Will provide rapid employment of Combat Service Support Automation

during Peacetime Operations (formerly Operations Other Than War (OOTW)) and war at echelons battalion and above.

IS 97-003: Logistics Command, Control, Communication and Automation (C3A)

Description: Capability to link existing and evolving communications and automation systems. This capability must establish total integrated CSS/CS/CBT situation awareness and joint interactive decision aids. Will provide interface between the strategic, operational, and tactical areas of operations, low cost seamless, global, wireless, high data communication links. There is also a requirement for identification and development of joint interactive decision aids to enhance strategic, operational, and tactical logistics operations. These decision aids should have the dual capability of being an effective training tool during normal unit training, large scale training exercises, provide logistics interface into Distributed Interactive Simulations (DIS) and other DOD systems.

IS 97-004: CSS Intranet

Description: Capability to perform CSS training and STAMIS functions on a high bandwidth, multi-level secure, CONUS to Battalion intranet using low cost software and hardware by leveraging commercial intranet products. Input devices, in addition to personal computers, should include Personal Digital Assistants (PDA).

OD 97-001: Force Sustainment Command

Description: Capabilities, as provided by an established command, to control all elements of logistical and explosive ordnance disposal support. Must consolidate and integrate force sustainment capabilities to provide support across range of operations. Will provide a single proponent for all doctrine, training, and force and materiel development for functions associated with the mission to provide maintenance, ammunition, and explosive ordnance disposal support.

OD 97-003: Anticipatory Logistics

Description: Capability to anticipate maintenance and supply requirements for major weapons systems. Will provide pre-assessed information on ammunition status, fuel status, progressive degradation of the system components, and forecast pending failure.

OD 97-004: Onboard Diagnostics and Prognostics

Description: The capability of onboard equipment to accurately diagnose failure and forecast pending failure of mission essential or high cost maintenance drivers on weapons systems. Operating data are either "sensed" by onboard sensors or read from the system's internal digitized control network. These data are converted to useful information by the onboard computer. Information will be communicated to command and logistics activities using the Anticipatory Logistics-Command and Control-Based Digital Automated Information System.

OD 97-006: Contact Maintenance

Description: Capability to return equipment to service quickly at the equipment downsite. Will provide continuous maintenance operation, (mobile power source to operate tools, maintain repair parts stock, and on -board lift), with enhanced cross-country mobility, communications, and mounted weapons to defend against aggressors.

OD 97-008: Data Repositories

Description: Capability to create, maintain and allow for remote activities to access a wide range of data. Will provide instant access to a wide range of information including such things as system software updates, maintenance information on foreign equipment or equipment belonging to a sister service, or foreign language files.

OD 97-014: Diagnostics and Prognostics

Description: Capability to diagnose and prognosticate maintenance actions for Force XXI systems correctly, the first time. Will provide Test Measurement and Diagnostic Equipment (TMDE), enhanced Built In Test (BIT) equipment and artificial intelligence to predict maintenance and ammunition requirements and feed this information, electronically, to current and projected automated CSS systems.

CS 97-003: Peace Operations Sustainment

Description: Capability to seamlessly transition from peace operations sustainment to wartime sustainment mode employing developed CSS systems and processes. Will employ existing and evolving sustainment equipment.

CS 97-004: In-Transit Visibility/Total Asset Visibility/Battlefield Distribution

Description: Capability to integrate tracking, materiel/carrier content status indication, and extended communications capabilities associated with all classes of supply, unit equipment, units, and required movement platforms. Will provide access to evolving technology improvements in the ability to effectively track and control of supply/distribution operations covering all levels of suppliers, customers/materiel users, supply locations, and delivery points; provide near real time or real time access to an established distribution system data base and control capabilities.

CS 97-005: Personnel Service Support (PSS)

Description: Capability to perform complete range of PSS both military and civilian functions associated with Personnel, Finance, Chaplain, JAG, and Public Affairs in con-junction with existing and evolving operational capabilities/processes while minimizing the footprint of related and interfacing command and communications systems. Will provide at the highest level possible near real time/real time personnel tracking, casualty tracking, mail tracking/delivery, full-up communications capabilities to include FAX, VTC, satellite link, e-mail, and desktop computer applications, access to the full-range of functional Finance and accounting systems, and seamlessly interface with current and developing systems.

Chapter 4
Implications

4-1. Doctrine. Doctrine is defined as how the Army operates. Doctrine is a set of fundamental principles by which military forces guide their actions in support of national objectives. While doctrine, published in field manuals (FMs) is authoritative, judgment is required in applying these principles. Maintenance doctrine is changing to reflect the organization, roles and missions of the local, regional, and national maintenance managers, relationships with the LSE and the TSC, how ISM operates in a contingency environment, and unique challenges faced by all sustainment maintenance activities. Policy requires revision to define the local and regional boundaries and assign MACOM responsibilities.

4-2. Training.

a. ISM introduces new maintenance business procedures which require changes in Army training. A training impact analysis is essential to assess the effect of maintenance doctrinal changes on programs of instruction (POI), Army Training Evaluation, and any associated STAMIS training. TRADOC schools

need to add ISM to existing training literature for all logistics-oriented professional development classes for both military and civilians.

b. The Army relies on the RC to perform sustainment maintenance during peacetime and provide a vast majority of sustainment maintenance CSS during contingency operations. The ISM structure assists in the train-up of RC on current and future weapon and logistics systems.

4-3. Leadership. Professional development courses ranging from entry level (e.g., warrant officer candidate school, branch officers basic and advanced courses) through senior level (e.g., Logistics Executive Development Course, Command and General Staff College, Industrial College of the Armed Forces, Army War College, civilian equivalent training courses) must be revised to provide leaders with technical proficiency in maintenance management. A heavier reliance on the industrial base suggests that the services must expand the training with industry programs. Training Army logisticians to better anticipate requirements and to manage by exception will be key to battlefield success.

4-4. Organization. A fundamental tenet of ISM is that it will cause no net increase in the Army's personnel end strength. MACOMs will redistribute personnel to man the NSMM, RSMMs, and LSMMs. The Army's goal is to structure its forces to meet mission requirements in the most effective manner. An organizational assessment is performed when doctrinal changes occur or when roles and missions change to ensure that the organization can perform the missions assigned. Source documents establish the required force structure and equipment for an organization. Future logistics organizations must be modular, tailorable, and flexible to sustain contingency operations. Organizational design must also facilitate split-based operations.

4-5. Materiel. The future Army will require a smaller force to use various technologies to increase battlefield tempo, lethality, and survivability. New technologies will drive future materiel requirements, systems, and platforms. The goal is to provide flexible, prompt, and efficient sustainment on future battlefields. Automation is essential to provide visibility of all maintenance capabilities and capacities throughout the ISM structure.

4-6. Soldiers/civilians. Quality soldiers, trained and led by competent and caring leaders, remain the keystone to success on future battlefields. Civilian employees provide essential support and services to soldiers and Army organizations. The total force faces a variety of challenges in preparing for and executing missions across the range of contingency operations. No additional MOSs or changes to MOSs are required; however, the current civilian personnel management system will require changes to provide essential training, enable increased experience through assignment moves, and foster promotion. Consideration should be given to coding positions as "emergency essential." Job descriptions and career progressions must also be changed and incorporated into the civil service personnel system.

Glossary

AC	Active Component
AMA	Associate Maintenance Activity
AMC	Army Materiel Command
ASCC	Army Service Component Commander
ASL	Authorized Stockage Lists
AVIM	Aviation Intermediate Maintenance
BIT	built-in test
BN/TF	battalion/task force
CASCOM	Combined Arms Support Command
CBT	combat
CENTCOM	US Central Command

CINC	Commander in Chief
CMMC	Corps Materiel Management Center
CMRRP	Corps Managed Regional Repair Program
COE	Center of Excellence
COMMZ	Communication Zone
C2	command and control
CONUS	continental United States
COSCOM	Corps Support Command
CS	combat support
CSA	Chief of Staff, Army
CSG	Corps Support Group
CSMS	Combined Surface Maintenance Shops
CSS	Combat Service Support
DCSLOG	Deputy Chief of Staff for Logistics
DIS	Distributed Interface Simulations
DLA	Defense Logistics Agency
DOD	Department of Defense
DOL	Directorate of Logistics
EAC	echelons above corps
FAX	facsimile
FM	field manual
FOC	Future Operational Capabilities
FORSCOM	Forces Command
FRA	Forward Repair Activity
FY	fiscal year
GS	general support
GSU	General Support Units
HQDA	Headquarters, Department of the Army
IOC	Industrial Operations Command
ISM	Integrated Sustainment Maintenance
JAG	Judge Advocate General
K'R	contractor
LSE	Logistics Support Element
LSMM	Local Sustainment Maintenance Manager
MACOM	major Army Command
MATES	Mobilization and Training Equipment Sites
METT-T	Mission, Enemy, Terrain, Troops, and Time Available
MOS	military occupational specialty
MMT	Materiel Management Team
NG	National Guard
NGB	National Guard Bureau
NICP	National Inventory Control Point
NSMM	National Sustainment Maintenance Manager
OCAR	Office of the Chief, Army Reserve
ODS	Operation Desert Shield; Operation Desert Storm
OOTW	Operations Other Than War
OPTEMPO	Operational Tempo

PDA	Personal Digital Assistants
POI	Program of Instruction
PSS	Personnel Service Support
RC	Reserve Component
RSMM	Regional Sustainment Maintenance Manager
SASO	Stability and Support Operations
SRA	Specialized Repair Activity
STAMIS	Standard Army Management Information System
SWA	Southwest Asia
TAV	Total Asset Visibility
TDA	Table of Distribution and Allowance
TMDE	Test Measurement and Diagnostic Equipment Allowance
TOE	Table of Organization and Equipment
TRADOC	United States Training and Doctrine Command
TSC	Theater Support Command/Theater Support Commander
US	United States
USAR	United States Army Reserve
VM	velocity management
VTC	Video Television Conference

FOR THE COMMANDER:

OFFICIAL:

CHARLES W. THOMAS
Major General, GS
Chief of Staff

GARY E. BUSHOVER
Colonel, GS
Deputy Chief of Staff
for Information Management

ANEXO I

CONCEITO DE EMPREGO PARA O APOIO SANITÁRIO

TRADOC Pamphlet 525-50

OPERATIONAL CONCEPT FOR COMBAT HEALTH SUPPORT

1 October 1996

FOREWORD

The role of the Army in support of the national military strategy has not changed. It is to provide land forces capable of operating across the entire spectrum of military operations. However, as the focus shifts from a forward deployed to a CONUS-based Force Projection Army, the requirement to generate and deploy these forces adds new dimensions to the conduct of combat health support operations.

The dynamics of our changing world, in terms of economics, the national military strategy, and possible threats, create unique challenges for battlefield health care delivery. These challenges must address the requirements for strategic force projection, rapid operational deployment, and lightning quick military tactical operations, as well as the requirements for operations other than war. The design criteria for the health support system of the future should mirror the evolutionary characteristics of the Army of the future. This system must provide flexible, versatile, modular medical units to support the rapid deployment of a force projection Army, yet capable of supporting forward deployed forces. These units will be capable of operating in a split based mode to support the full range of military roles across the operational continuum. The medical force of the future will assure a medical presence with the soldier, while at the same time providing state-of-the-art combat health support.

This pamphlet provides the conceptual foundations of combat health support as we move into the twenty first century. It is the Army Medical Department's evolving vision of future medical operations and organizational designs. It includes a number of new programs, initiatives, and modernization efforts that were generated as a result of the Medical Reengineering Initiative. It encompasses the required capabilities for all medical functional areas. It is influenced by the strategic, operational, and tactical levels of war, and supports all mission requirements across the operational continuum.

Department of the Army
Headquarters, United States Army
Training and Doctrine Command
Fort Monroe, Virginia 23651-5000

***TRADOC Pamphlet 525-50**

1 October 1996

Military Operations
OPERATIONAL CONCEPT FOR COMBAT HEALTH SUPPORT

Summary. This pamphlet provides a concept that serves as the basis for developing doctrine, training, leader development, organizations, and materiel changes focused on requirements and solutions for combat health support (CHS) operations. It provides the framework to describe the capabilities required for CHS to a force projection Army. Under this concept, CHS capabilities are projected to meet mission requirements over the range of the operational continuum. It links the strategic to the operational level of health services. Combat health support at the tactical level assists in clearing the battlefield of casualties and providing an early personnel replacement pool.

Applicability. This pamphlet applies to all Army Medical Department (AMEDD) and U.S. Army Training and Doctrine Command (TRADOC) activities that develop doctrine, training, leader development, organization, materiel, and soldier requirements.

Suggested improvements. The proponent of this pamphlet is the Deputy Chief of Staff for Combat Developments. Send comments and suggested improvements on DA Form 2028 (Recommended Changes to Publications and Blank Forms) through channels to Commander, TRADOC, ATTN: ATCD-BP, Fort Monroe, Virginia 23651-5000. Suggested improvements may also be submitted using DA Form 1045 (Army Ideas for Excellence Program (AIEP) Proposal).

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* This pamphlet supersedes TRADOC Pamphlet 525-50, 11 April 1986

Chapter 1
Introduction

1-1. Purpose. This operational concept is a forecast and an outline of the combat health support (CHS) required to support a Force Projection Army into the 21st century. It outlines the capabilities the combat health support force must develop and field in order to support the Army. This concept describes a broad summary of changes in the CHS system throughout the functional areas of CHS. It also serves as the foundation for change in the domains of doctrine, training, leader development, organization, materiel, and soldier support.

1-2. References. Required and related publications are listed in appendix A.

1-3. Explanation of abbreviations and terms. Abbreviations and terms used in this pamphlet are explained in the glossary.

Chapter 2
Overview

2-1. Need for the concept. This CHS concept identifies Army medical department (AMEDD) required capabilities to support operational warfighting concepts to include force projection, peace operations, humanitarian assistance, and operations in aid of civil authorities. The CHS structure must be strategically and tactically agile to respond to the broad range of worldwide requirements. This system must be ready and versatile and capable of rapid deployment to help preserve U.S. global interests and responsibilities. As battlefield technology increases, the importance of an efficient and highly responsive medical support system grows proportionately.

2-2. Threat.

a. The post Cold War international environment presents the U.S. with security challenges that are unprecedented in ambiguity, diversity, risk, and opportunity. For many decades, nearly all U.S. intelligence analysis was directed toward one country. The Soviets strategic doctrine and tactics for conducting offensive and defensive operations were well understood and confident estimates of Soviet weapons capabilities existed. Additionally, during the Cold War, U.S. National security strategy carefully rationed the use of military force to only those conflicts which promoted democracy over communism. The world was a dangerous place, but the superpowers were held in check by the knowledge that each had the capability to destroy the planet.

b. The end of the Cold War signaled the emergence of a "New World Order". Unfortunately, reality has proven that this "New World Order" is neither new nor orderly. The old forces of adventurism, nationalism, and separatism have reappeared, often with violent and unpredictable consequences. Coupled with this is a new National Security Strategy, still in its infancy, which allows for U.S. military

involvement in the complicated scenarios such as peace making operations, nation building, and humanitarian assistance.

c. With the diminished threat of a large scale military confrontation, military force size and capabilities are being affected in countries throughout the world. Many of the major military powers are moving towards smaller, better equipped, and better trained forces. Developed nations have also improved military capabilities through greater access to military system technologies and the increased availability of a wide range of advanced military equipment on the international market. How well these nations are able to integrate advanced weapons systems and technology into their armed forces is uncertain. However, the global arms market is creating an environment where even underdeveloped countries may acquire the advanced weapons system(s) for a "high technology niche" that may increase their leverage over another regional power. While high tech weapons will be available either through direct purchasing or through third party countries, many hostile forces, especially paramilitary or insurgent forces, will maintain a low tech inventory. This low tech environment does not translate into a low threat environment for U.S. forces. Small hostile forces often demonstrate a creativity and flexibility for use of low technology weapons that is unexpected, thereby compounding the problems associated with assessing their capabilities. The implication for the U.S. Army is clear. U.S. forces must be continually prepared to face a variety of threat forces, many with credible military capabilities.

d. The AMEDD views threat from two perspectives. Both viewpoints are rooted in a potential adversary's capability to conduct combat operations. The first of these viewpoints is similar to the way threat is viewed in the Army. That is a potential adversary's capability to disrupt CHS operations on the battlefield. The second is the AMEDD's responsibility to anticipate and prevent the degradation of soldiers' health and performance by environmental hazards and military capabilities. This second perspective is called "medical threat." Soldiers are the targets of these threats. Weapons or environmental conditions that will generate casualties beyond the capability of the CHS system are considered to be significant medical threats. Weapons or environmental conditions that produce qualitatively different wound or disease processes are also significant medical threats. Elements of medical threat include the following:

(1) Naturally occurring disease.

(2) Environmental extremes and battlefield hazards.

(3) Battle injuries - small arms and fragmentation ordnance/munitions.

(4) Biological warfare.

(5) Chemical warfare.

(6) Directed energy sources.

(7) Blast effect munitions.

(8) Combat stress and continuous operations.

(9) Flame and incendiary weapons.

(10) Nuclear weapons.

2-3. Assumptions.

a. The reserve component. Both the U.S. Army Reserve and the Army National Guard will be relied upon to provide a variety of CHS functions in support of combat operations and military operations

other than war. Given a shrinking force structure and declining defense expenditures in general, this reliance on reserve component capabilities will increase in the future. The reserve component will continue to maintain a significant portion of the Army's CHS structure.

b. Civilians in support of military operations. Department of Defense (DOD) civilian personnel, civilian personnel from non DOD agencies and organizations, civilian contractors, and elements of host nation support organizations will provide an increasing number of capabilities in support of military operations. Use of these non-uniformed and non-traditional support personnel will require the administration of CHS that differs from the historical practices of the past.

c. Joint, multinational, and interagency operations.

(1) Missions that require the projection of Army forces are intrinsically joint operations. Joint force interoperability is crucial to the success of CHS operations. Further, joint CHS forces must be able to use and integrate national intelligence systems linked into joint command, control, and communication systems. During peacetime, the Army must train, structure, and equip its units to prepare for joint CHS operations in support of the projection of U.S. forces.

(2) Multinational operations will require different integration processes than those used during the Cold War. Multinational efforts to streamline the focus of combat power are replacing national doctrines. The Army can expect combatant commanders to exercise their authority and ask national commanders to take on support missions to the combined or coalition force. Given the demands of these types of operations, interoperability between forces of different nations will be required. While standardization is the ideal, it may not be fully achievable. Therefore, interoperability efforts must continue where feasible and practical.

(3) Army forces may operate in support of non-DOD agencies in achieving national objectives. These interagency operations may require support from the Army's CHS system.

d. Technology.

(1) Technology must thread itself through the entire CHS system, enhancing already existing capabilities; providing replacements for outdated technology; and providing new capabilities never before available. In order to achieve the goals of Army modernization, we must look at the prevention of disease through molecular biology technology, advanced physiologic and psychological soldier monitoring systems, modern ground and air evacuation platforms with enhanced enroute medical support capabilities, computer and artificial intelligence assisted treatment protocols, communication systems and devices that permit units to be electronically collocated and provide for a worldwide telemedicine presence, and projection of real time medical specialties across the continuum of care.

(2) Medical communications for combat casualty care (MC4) will employ advanced technology systems and procedures. These systems, coupled with conventional medical applications, will project or expand the sphere of influence of professional medical services or expertise in support of forces deployed into a theater of operations. This technology will speed up the acquisition of patients, provide the combat medic with access to physician guidance, and link highly specialized physicians, located in the theater rear or out of theater, with physicians operating at austere forward medical facilities.

e. Medical readiness. Medical readiness encompasses the ability to maintain and project the continuum of health care resources required to provide for the health of the force. It includes the ability to mobilize, deploy, and sustain field medical services and support for any operation requiring medical services. It must also be able to operate in conjunction with beneficiary health care.

2-4. Limitations.

a. Successful long term implementation of this concept is dependent upon communications and automation impacting MC4, casualty and patient accountability, medical evacuation, split based operations, and management of Class VIII materiel, repair parts, and blood products for all medical elements.

b. CHS will be influenced by resources available in the area of operations including prepositioned materiel. The level of infrastructure development will affect CHS operations and force closure. Host nation, international law, regulations, directives, or treaties may prescribe or constrain the nature or degree of CHS operations.

c. Maximum use of strategic air and sea assets will be realized through the deployment of modular CHS elements. These assets will also be required for out of theater evacuation of casualties. CHS may be constrained due to limited or nonexistent transportation assets.

Chapter 3
Concept

3-1. Overview. The purpose of the CHS system is to conserve the fighting strength. This includes both the deployed force and the sustaining base. Consistent with military and logistical operations, CHS operates in a continuum across strategic, operational, and tactical levels. The goals of CHS are to: reduce the incidence of disease and nonbattle injury through sound preventive medicine programs; provide medical care and treatment for acute illnesses, injuries, or wounds; expedite evacuees out of theater; and promptly return to duty those soldiers who have recovered. The major principles of this vision are:

a. Prevent casualties from disease and non battle injury (DNBI) through medical surveillance, and disease and injury control.

b. Far forward medical treatment, including advanced trauma management and far forward surgery.

c. Standardized medical units using a modular designed medical support system.

d. Standardized air and ground medical evacuation units, using air evacuation as the primary means of medical evacuation on the battlefield.

e. Maximum use of emerging technology to improve battlefield survivability, and decrease mobility and resource requirements.

f. Flexible, responsive, and deployable hospitals designed and structured to support a Force Projection Army and its varied missions.

g. Enhanced ancillary and functional support systems using state-of-the-art technology.

h. Command and control (C2) units capable of providing the requisite C2 package to allow medical units to perform split based operations.

3-2. Concept description.

a. Power projection will continue to be a central concept in the national military strategy of the United States. The CHS system must, therefore, be capable of projecting support worldwide to help preserve U.S. global interests. The forces which the CHS system supports will be rapidly deployable, lethal, versatile, and expandable. The Force XX1 battlefield will be characterized by dispersion, lightning quick military operations, increased mobility requirements, rapid task organization, and lengthened lines of communication. The CHS must be strategically and tactically agile in order to be responsive to the broad range of worldwide requirements.

b. The CHS system is a continuum from the forward edge of the battle area through the Continental United States (CONUS) sustainment base. It is a system that provides medical management throughout all levels of care. The challenge is to simultaneously provide medical support to deploying forces, provide health care services to the CONUS base, and establish a CHS system within the theater. Additionally, there will be a requirement to provide medical support to redeployment and demobilization operations at the conclusion of military operations. Furthermore, CHS requirements will surface in support of support and sustainment operations. The basic tenets of CHS for a force projection Army involve strict adherence to Army medical battle rules. These battlefield rules provide the basis for the development of medical organizations and force structure. Table 3-1 lists these rules in order of precedence.

c. The CHS system will be structured in such a way that it can be tailored to perform multiple diverse missions. It will be designed to support extremes such as forced or unforced early entry operations, through humanitarian/nation assistance missions, to the support of multiple corps organizations requiring long-term sustainment. This will be accomplished by designing medical units and organizations that are agile, mobile, deployable, survivable, tailorable, and capable of providing various battlefield medical capabilities simultaneously in support of military operations.

Table 3-1. Army Medical Battlefield Rules

Be There (Maintain a Medical Presence with the Soldier)
Maintain the Health of the Command
Save Lives
Clear the Battlefield of Casualties
Provide State of the Art Medical Care
Ensure Early Return to Duty of the Soldier

d. While the emphasis of the CHS system has changed, it will continue to anticipate the needs and requirements of the combined arms forces and provide responsive medical support to the right place at the right time. This will be accomplished by focusing resources and medical skills far forward in the combat zone. Far forward stabilization and emergency medical treatment supports rapid clearing of the battlefield without sacrifice of life or function. The CHS system will now be a source of limited replacement manpower to the battle commander during the early stages of conflict. This pool of soldiers will be formed from the lightly wounded and less seriously sick or injured soldiers that can be treated and returned to duty (RTD) almost immediately.

e. Divisional and echelons above division (EAD) CHS organizations will be modular in design and employment, providing flexibility and responsiveness to meet the challenges of the evolving battlefield. Hospitals will possess the capability for early deployability into a theater with organic assets, such as emergency surgical and medical resources, to augment and reinforce divisional medical elements. The modular design of CHS organizations provides the flexibility that is needed to rapidly reinforce or reconstitute medical elements at any level of the system.

f. Rapid clearing of the battlefield and assimilation of wounded, sick, or injured soldiers into the CHS system is critical in reducing morbidity and mortality among U.S. soldiers. Speedy recovery of the wounded and sick from areas of operations, and the efficient execution of medical evacuation missions, are essential ingredients in successful combat health support operations. The CHS command and control infrastructure is designed to deliver coordinated joint medical regulating within the theater.

g. Medical logistics organizations will maximize early forward support flexibility. Deployed elements will be capable of supporting initial increments of a deploying force. Health service logistics

will be anticipatory and projected when and where needed; it will be tailored to support missions continuously through each stage of the battle, and across the operational continuum. Host nation support agreements will be used where possible as extensions and multipliers of U.S. medical resources.

3-3. Required capabilities.

a. Medical treatment.

(1) Medical treatment consists of those measures necessary to recover, resuscitate, stabilize, and prepare the casualty for evacuation to the next level of care. Echelon (level) I medical care will be performed by medical elements organic to combat and selected combat support units. Echelon (level) II medical care will be provided by organizations designed to provide reinforcing CHS to Echelon I medical elements, and perform area medical support missions. The use of self aid/buddy aid and the combat lifesaver will be critical adjuncts to the CHS system by providing emergency first aid on the battlefield until trained medical personnel can arrive on the scene.

(2) Medical treatment will be provided through the use of modular medical elements and units designed to perform specific battlefield medical functions. The composition of each module type will be identical regardless of where they are employed. This will ease the reconstitution burden on the CHS system. Echelon I CHS elements will provide advanced trauma management, limited preventive medicine services, routine medical sick call, and limited medical ground evacuation. Echelon II elements will duplicate these services in addition to providing limited dental, x-ray, and medical laboratory services, and extensive ground medical evacuation services. Mobile medical treatment modules will be used forward to provide area support to all elements attached to maneuver brigades, and to reinforce the treatment capabilities of maneuver battalions. Under certain conditions, treatment and ambulance modules may be collocated at ambulance exchange/transfer points to ensure continuity of care during the evacuation process. Other area support medical functions will include limited optometry, mental health and combat stress control, preventive medicine, and limited patient holding capabilities.

(3) Casualties whose wounds or injuries will not allow for immediate evacuation out of the division will receive immediate surgical care in order to stabilize them for evacuation. The requirement to project resuscitative surgery far forward will increase as a function of the extended battlefield. Forward surgical teams (FST) will meet this need in support of brigade-sized units. Surgical stabilization of otherwise non- transportable casualties is the focus of these forward surgical teams. The teams will have the capability to select (triage) surgical candidates, provide pre-operative treatment, surgical stabilization, and postoperative recovery. Generally, FST will be corps assets, and employed with, or attached to, an Echelon II medical unit in support of combat operations. The teams will be attached to corps hospitals when not employed in the division. The FST will be organic to the airborne and air assault division and the separate armored cavalry regiment.

(4) Additional CHS, above that provided by organic organizations, required by the division will be provided by corps level medical organizations. These organizations will also provide CHS to corps organizations on an area support basis. These units will be responsible for providing CHS to corps elements within the combat zone as well as those positioned forward in the battle zone. Medical elements may be task organized to move forward with supported units, and to provide medical evacuation from those units to Echelon II facilities or theater hospitals. These corps medical organizations will incorporate the medical modular design found in Echelon I and II CHS units. This allows for reinforcing or reconstituting forward deployed medical assets. Corps medical C2 elements will be designed using modularity principles in order to project the necessary medical support to the most appropriate location on the battlefield. The location of these units will be contingent upon troop population, medical support requirements, and their ability to reinforce or reconstitute other corps and divisional medical assets.

b. Medical evacuation and regulation. Casualty evacuation from the battlefield is a critical element of the overall CHS system. It must be immediately available and capable of moving seriously wounded, injured, or ill personnel from forward locations on the battlefield. Both air and ground evacuation must be totally integrated into the CHS mission in order to treat and evacuate casualties. Air evacuation will be the primary and preferred mode of evacuation. Regardless of the mode of evacuation, all evacuation vehicles will be capable of providing enhanced en route medical care and monitoring capabilities. As a part of this process, patients must be regulated to the most appropriate level of care. Patient regulating will be accomplished through coordination with corps medical C2 organizations and the forward areas of the battlefield. Together, air and ground evacuation will ensure continuity of care and the continuous flow of casualties through the CHS system. Coordinated, integrated enhanced evacuation will minimize the number and relocation requirements of theater hospitals.

c. Hospitalization.

(1) Theater hospitals will provide definitive care and CHS to all patients who will either be returned to duty or stabilized for evacuation out of the corps or theater. Hospitals will be redesigned around elements that can be rapidly and easily projected into a theater to support all missions across the operational continuum. Hospitals will be streamlined in order to decrease site limitations and sustainment requirements, while improving their strategic transportability. These hospitals will be designed to be employed forward in the theater, as well as in the theater rear. They will be comprised of identifiable elements, task-organized to support particular missions, in accordance with (IAW) the hospital's location on the battlefield. Theater hospitals may be required to locate in offshore facilities or in third country support bases. These may be relatively fixed facilities. Dependent upon the force mission, hospitals may be sited near theater air heads or seaports to prepare patients for evacuation out of the area of operations. Additionally, medical equipment sets will be redesigned to support a variety of hospitalization requirements. These sets will include medical, surgical, humanitarian, obstetrical and gynecological, pediatric, and geriatric medical equipment sets.

(2) Hospitals in the CONUS sustaining base will provide the ultimate treatment capability for patients generated within the theater. Army hospitals and medical centers, along with other available medical facilities, will be specifically designated to handle the most definitive medical or surgical requirements. Returning patients will be regulated to the most appropriate CONUS hospital/medical center to accommodate their specific medical conditions. Additional CONUS based medical evacuation units, authorized under Tables of Distribution and Allowances will support CONUS mobilization sites. These units will also support the Air Force evacuation system within CONUS. CONUS hospitalization will be designed to provide the soldier with maximum return of function through a combination of medical, surgical, rehabilitative and convalescent care.

d. Combat health logistics and blood management.

(1) Major changes in the Army's war reserve policy will affect planning and sustaining operations. The most significant of these changes will be the central management of army war reserves and operational project stocks. This will provide the Army the flexibility to posture reserve stocks based on the geopolitical climate. One key element to this program is prepositioning reserve stocks afloat. The use of prepositioned ships, along with reducing numbers of army reserve storage locations, will increase the Army's ability to respond to all situations. As a means of early support, modular medical organizational equipment may be prepositioned afloat. Class VIII unit and sustaining equipment may also be afloat, including the resources for producing oxygen and storing blood and blood products.

(2) CHS logistics must be anticipatory and projected when and where needed. It must be tailored to continuously support missions through all stages of the battle, and across the operational continuum. The Class VIII system must reduce its reliance on strategic air and sea lift, utilize throughput to the

maximum extent possible, eliminate double handling, and recognize and plan for the distribution mission. Theater Class VIII management will be accomplished through a unit distribution system that will push preconfigured supplies and services as far forward as needed. Blood and resuscitative fluids will be dispersed throughout the medical support system using predetermined distribution guidelines. A medical logistics management center will link the wholesale system (CONUS) with the theater. The AMEDD Combat Health Logistics System will serve as the theater's Single Integrated Medical Logistics Manager (SIMLM).

(3) The Combat Health Logistics System will employ standardized state of the art information management and communications systems. These systems will facilitate total asset and in transit visibility, automated transmission of optical fabrication requests, management of blood and blood products, management of medical equipment readiness, and management of captured enemy medical materiel and equipment. These systems will interface with systems from other services in order to accomplish the SIMLM mission.

e. Preventive medicine.

(1) Those measures that prevent or reduce the incidence of disease and non-battle injury (DNBI) are the most significant medical contributions to the warfight. Soldiers who do not become casualties remain part of the fighting force, they do not require treatment, evacuation, or hospitalization. Prevention of DNBI frees medical assets to support soldiers wounded by battle injury. DNBI remains the largest contributor to casualty production on the battlefield. As demonstrated in recent military operations, the doctrinal deployment of preventive medicine assets results in remarkable reductions in DNBI. Preventive medicine assets can be tailored to enter the area of operations at each level of conflict, an absolute requirement for establishment of an effective DNBI prevention program.

(2) Preventive medicine support focuses on those measures which provide the greatest return in prevention of DNBI. Food and water-borne disease, environmental injury, arthropod-borne disease, and non-battle injury are the most significant components of the medical threat. Traditional preventive medicine support provides the command with tools to ensure the safety of food services, water production techniques, and control methods for disease vectors. Preventive medicine physicians recommend vaccines and drug prophylaxis regimens and provide epidemiological expertise for prevention of infectious disease. Preventive medicine units educate soldiers in prevention of disease and environmental injury, including formal training programs for Field Sanitation Teams. To prevent chronic disease or injury, preventive medicine assets monitor the occupational and environmental hazards common to soldiers. The Army recognizes the serious social and political impact of chronic disease and injury on sustainment of the Force. Prevention of long-range illness allows resources to remain focused on the warfight, avoiding the drain of costly medical support and financial liability.

(3) Preventive medicine resources will become a more direct contributor to the warfight. The evolutionary development of a comprehensive DNBI surveillance system will provide battlefield commanders with a health profile of tactical significance. Commanders will (in "real" time) visualize the health status of the entire force including the impact or potential impact of biological warfare threat agents. Using advanced technology, the disease surveillance system will coordinate health data from CONUS health facilities to the most forward medical treatment facilities, in a joint service environment. The ability of warfighters to evaluate their true fighting capabilities will be significantly enhanced.

f. Veterinary services.

(1) Veterinary services contribute to conserving the health of the command through two broad based functional areas -- food inspection services and animal medical care. As the DOD Executive Agent the Army will provide veterinary medicine support to U.S. Air Force, Navy, Marines, and Army

forces, as well as to other federal agencies such as Department of Agriculture, Department of Commerce, Drug Enforcement Agency, Secret Service, Department of State, and to our allies.

(2) Veterinary service medical modules will provide food inspection services to ensure wholesomeness, quality, and hygiene of rations. Veterinary medicine modules will provide animal medical care services to the military working dog. Additional services will include the prevention and control of zoonotic diseases.

(3) Veterinary service units will be designed with the flexibility to deploy numerous teams or personnel to accomplish diverse and decentralized support operations, or consolidate to meet requirements of a larger support operation. They will have the capability to task organize and deploy modules for short duration in support of military civil operations. These actions relate to the public health and preventive medicine aspects of the local human and animal populations, and to restoring agricultural and food animal health and food chains for occupying forces and civilian human and animal populations. Additional assistance includes establishing sanitary food production and processing procedures that will eventually permit the sale to U.S. Armed Forces. This may, in turn, be a key factor in the survival of the country as an independent nation. Veterinary officers may be used to augment CHS assets during mass casualty situations.

g. Dental services.

(1) Dental service support will provide dental care to all personnel in the theater. This support maximizes the quick return to duty of dental casualties, provides resuscitative, surgical capability for maxillofacial injuries, maintains the dental fitness of theater troops, and reinforces medical treatment facility personnel during mass casualty situations. There are two categories of dental care in theater: emergency and preventive care and maintaining care. There are also three types of dental care in theater: unit, hospital, and area dental care.

(2) Unit level dental care will be provided by a dental module organic to divisional and nondivisional medical companies, and all Special Forces Groups. This module consists of dental personnel, lightweight dental equipment, and is capable of 100% mobility. The module will provide emergency dental treatment to soldiers during tactical operations, employing the principle of "tail gate" support. As the tactical situation permits, and during build up and reconstitution, emergency and preventive dental care will be provided. The senior dental officer assigned within the division will serve as the division dental surgeon. The division dental surgeon will provide technical guidance to other divisional dental officers, and advise the division staff and commander on dental related matters.

(3) Hospital level dental support will be found in theater hospitals. This level of support will minimize loss of life and disability resulting from oral and maxillofacial injuries and wounds. The hospital dental staff will provide emergency and preventive and maintaining dental support to all injured or wounded soldiers, as well as the hospital staff. One member of the staff will be an oral and maxillofacial surgeon assigned to the surgical service of the hospital. The surgeon will manage oral and maxillofacial surgical procedures, postoperative care, and other medical procedures as necessary.

(4) Area dental support, consisting of the majority of theater dental assets, will be provided by dental service companies. These units will provide emergency and preventive dental services on an area support basis. Dental companies will be comprised of modular dental teams. Some of the teams will have the capability to operate separate dental treatment facilities, or to consolidate forces and operate one large facility, depending on the operational and tactical environment. Other teams will be employed to provide far forward emergency and preventive dental care, and to reconstitute and augment unit level dental resources. Area dental units will also be employed in support of force provider modules.

h. Combat stress control.

(1) The mission of combat stress control is to enhance unit and soldier effectiveness through increased stress tolerance and positive coping behaviors. Primary prevention requires the identification and control of stressors and stress before they disrupt the mission or soldier health. Secondary prevention involves the rapid reversal of dysfunctional stress reactions (battle fatigue). Intervention must be accomplished according to the principles of proximity, immediacy, expectancy, and simplicity. Delay and over evacuation cause greater morbidity and long-term disability. Misconduct stress behaviors must be prevented by stress control measures because once criminal misconduct has occurred, it must be subject to disciplinary action.

(2) Control of stress at all echelons remains, ultimately, the commander's responsibility. At each echelon, unit leaders, medical personnel, ministry teams, staffs, and troops must be educated, monitored, and mentored in stress control principles and techniques. Combat stress control/mental health personnel must have a detailed understanding of supported units and their missions.

(3) Combat stress control/mental health personnel are organic to some Level II medical units. These personnel provide staff input, consultation, reconstitution support to attrited units, neuropsychiatric triage, initial stabilization, and restoration treatment. They are reinforced where needed by modular, combat stress control teams. These mobile teams provide the same services throughout the theater on an area-support or direct-support basis. The modular teams can be task-organized to provide larger reconstitution support, restoration and reconditioning programs. The combat stress control personnel and units are also active in and pre-deployment and post-homecoming activities. Mental health consultation and education may be provided to host nations coalition partners, and refugees during peace operations, humanitarian assistance, and operations in aid of civil authorities.

i. Command, control, communications, computers, and intelligence (C4I). Medical C4I will be a dedicated seamless system for the command and control of our unique CHS system. Casualties are not commodities, but American soldiers. As the CHS system is dedicated to their treatment, evacuation, and hospitalization, the medical C4I system, from the foxhole into the sustainment base, is answerable to no higher authority than the Army combatant commander. Using the principle of "First in -- last out", CHS headquarters elements will arrive with lead elements of deploying force and orchestrate the arrival of follow on medical units into the theater. Medical headquarters elements must contain a small staff, flexible enough to reduce redundancy, yet robust enough to plan for and execute medical missions. This requires a communications and automation system that maintains continuous operations, even on the move. Automation, communication, and C2 procedures must interface among other Army systems, among all levels of command, and among other services, nations, and allies. There will be a requirement for C4I systems that can aid in patient accountability, track the movement of patients/casualties across the battlefield, assist with the regulation of patients into/out of theater hospitals, and manage the complexities of the theater Class VIII system.

j. Laboratory services. Medical laboratory functions in CHS operations assess disease processes and monitor the efficacy of medical treatment. As is the case in many CHS functions, the sophistication of laboratory services will increase at each successive level of care. Medical laboratory assets in divisional medical treatment facilities will be austere, in keeping with the mobility requirements of the division. Laboratory tests will be limited to simple manual procedures. Hospital laboratories will be capable of performing both manual and semi-automatic laboratory procedures, with limited transfusion services available. Theater level medical laboratory resources will consist of an array of professional medical laboratory personnel using advanced and highly sophisticated laboratory equipment and procedures. Theater laboratory capabilities include consultative, investigative, and definitive laboratory services. The goal of the theater laboratory will focus on the total health environment of the theater, rather than

emphasizing individual patient care. A majority of services will be oriented to the detection of chemical and biological agents, as well as indigenous diseases.

Chapter 4
Implications

4-1. Doctrine.

a. Current medical doctrine states that the objective of the existing health service support system is to reduce disease and nonbattle injury, provide care and treatment for acute illness, injury, or wounding, and promptly return to duty those soldiers who have recovered. This major premise lends itself well to supporting a force projection Army. The doctrinal philosophy of far forward care, modular medical organizations, flexible and responsive medical organizations, enhanced ancillary care, and continuous intensive medical management throughout all levels of care and evacuation is sound. Medical organizations will be designed and structured in order to align the CHS system with the tenets of future Army operations. These doctrinal tenets are applicable across the entire operational continuum of conflict. Future medical doctrine must continue to underscore the joint and multinational nature of future operations. Synchronization of all available medical assets, while avoiding duplication with other services or allies, needs to be established in doctrine.

b. All eight-series doctrinal manuals will be affected in some way by future health service support. The extent of impact will vary from manual to manual. Most doctrinal manuals will need, at a minimum, a revision, and, at the most, a total rewrite. Manuals that are based on a specific table of organization and equipment (TOE) may need revision and will be evaluated on a case-by-case basis.

4-2. Training.

a. Unit training. The Army Medical Department's most glaring training shortfall is the exclusion of medical units in training exercises and programs. CHS organizations must be included in active duty, reserve and joint operational exercises. Medical preparedness and interoperability must be tested. Medical forces must be trained to operate in support of broad political and economic objectives. Every CHS unit training program must be planned, aggressively executed, and thoroughly assessed. CHS training must be tough, realistic, and focus on capabilities and requirements across the operational continuum. Active and reserve component medical organizations must routinely practice and be involved with pre-deployment and deployment exercises.

b. Institutional training. Lesson plans and scenarios must be updated to mirror TRADOC Pamphlet 525-5 and Field Manual 100-5. Development of training devices, simulations and simulators that train CHS operations in support of Army operations is both cost-effective and an excellent teaching vehicle for medical personnel. Medical personnel must be provided field training experience to ensure their survivability on the battlefield. They need to be oriented toward battlefield CHS operational policies and procedures, and become familiar with field medical equipment, facilities, organizations, and logistics. Additionally, these personnel need to be trained on and practice CSS field operations and procedures. This will aid in the synchronization of combat health support with other CSS activities on the battlefield. Officer and enlisted filler personnel, projected for assignments to field medical units, must participate in training exercises and programs. They must also train in the clinical environment in order to maintain clinical/medical competency.

4-3. Leader development. AMEDD officers and noncommissioned officers, as well as nonmedical leaders, must fully understand the doctrinal tenets of CHS. Leadership at all levels must be proficient in commanding and working as part of medical organizations on the battlefield. CHS leaders must be developed in an environment that stresses tailorability. They must work with and be schooled in

multinational, joint, and host nation support operations. The medical leader must be fully proficient in providing and commanding medical units that can be rapidly and quickly projected throughout the world. Senior medical leaders will need an all-encompassing background. They must be developed with a common understanding of war fighting concepts and have the ability to articulate CHS to these concepts. Medical leaders must think outside of the medical box. That is to say, they must become capable of performing functions not normally associated with their branch. The CHS leader of the future cannot be guilty of understanding only one discipline. They must be part of an Army that requires them to know their specific trade well, but be capable of understanding and interacting with their sister services and host nations. Leader development courses need to be changed to provide leaders at all levels with this training and background.

4-4. Organization. CHS organizations must be as small as possible, yet retain functionality. Medical design shall follow the principles of modularity which allows the medical planner to quickly tailor medical resources in support of force projection operations. Medical organizations should have the capability to expand if the demand arises. Reconstitution of medical units is enhanced by the modular design at all levels of medical support. Interoperability demands the design of liaison teams within medical organizations. Personnel and equipment must be critically evaluated and drawn down to enhance hospital deployability and mobility. Organizational designers will integrate emerging technologies and consolidate medical functions, specialties, and material. This will make medical organizations more effective and easily deployable to the future battlefield. Hospital organizations will be redesigned to make them strategically deployable/mobile to meet operational requirements.

4-5. Materiel. CHS will rely heavily on emerging technologies to aid in meeting the requirements of future Army operations. Materiel strategies for medical organizations should look at near-, mid-, and far-term applications to ensure a constant stream of vital modernization. The medical procurer must look at each materiel acquisition and its relationship to worldwide force projection and interoperability with sister services, allies, and host nations. A top priority acquisition will be a fully integrated automated C4 system for all levels. The emphasis and expenditure of CHS funds for future materiel acquisitions should focus on supporting peacetime competition, conflict, and war. Additionally, hospitals will require light-weight, rapidly erectable shelters with man portable environmental control units. The Deployable Medical Systems (DEPMEDS) container system severely limits the mobility of hospitals, pose excess site limitations, and is resource intensive. As technological advances are captured, efforts will be made to leverage this technology into increasing the mobility and deployability of field hospitals. Development must ultimately support field medicine and help cover shortfalls in medical support across the operational continuum.

4-6. Soldiers.

a. The combat medic will face increasing challenges in providing modern health care on the future battlefield as well as in stability and support operations. Continued and increased emphasis is required on training and sustaining the medical proficiency of the combat medic and all military health care providers in the multitude of environments found during Army operations.

b. The training and sustainment of combat lifesavers and continued command emphasis on this training program can significantly improve the confidence of all soldiers in the immediate availability of advanced first aide by a member of the squad/team/ crew.

c. Key to the morale of medics and the welfare of soldiers in their care is the availability of modernized , light-weight medical equipment sets and the ability to rapidly communicate patient requirements across the operational spectrum. Also key is the issue of equipment that improves the medic's ability to efficiently perform duties under all environmental and NBC conditions.

Glossary
Section I
Abbreviations

AMEDD	Army Medical Department
C2	command and control
C4I	command, control, communications, computers, and intelligence
CHS	combat health support
CONUS	continental United States
DEPMEDS	Deployable Medical Systems
DNBI	disease and non-battle injury
DOD	Department of Defense
EAD	echelons above division
FST	forward surgical teams
MC4	Medical communications for combat casualty care
MCSB	misconduct stress behavior
SIMLM	Single Integrated Medical Logistics Manager
SOF	Special Operations Forces
TOE	table of organization and equipment
TRADOC	United States Training and Doctrine Command
U.S.	United States

Section II
Terms

Battle injuries

Small arms and fragmentation ordnance and munitions. Conventional munitions including small arms, high velocity weapons, land mines, rockets, bombs, artillery, as well as bayonets and other wounding devices used or employed by a single individual or a crew. This threat will be encountered in all geographic areas and will be employed by aggressor forces throughout the spectrum of conflict. Research and development in "smart munitions" and extended range artillery coupled with more powerful high explosives will increase the threat from these type weapons to exposed personnel. In low-intensity conflicts, wounds from booby traps, mines and nontraditional weapons (e.g., homemade explosives, crossbows and "pungie sticks") will be encountered.

Biological warfare

Biological warfare is defined by the U.S. intelligence community as the intentional use of disease-causing organisms (pathogens), toxins, or other agents of biological origin to incapacitate, injure, or kill humans and animals; to destroy crops; to weaken resistance to attack; and to reduce the will to wage war. Historically, biological warfare has primarily involved the use of pathogens as sabotage agents of food and water supplies in order to spread contagious disease among target populations. For purposes of medical threat risk assessment, only those biological warfare agents that incapacitate, injure, or kill humans or animals are of interest.

Blast effect munitions

Primary blast injury has been a rarity in the history of U.S. military medicine. Battlefield employment of blast effect munitions may represent an emerging medical threat in the form of primary blast wounded. This will be particularly true as new explosives developed for use in conventional munitions and special purpose munitions, such as fuel-air-explosives developed to exploit the advantages of blast effect munitions. Gas-filled bodily organs such as the ears, lungs, and digestive tract are most susceptible to primary blast injury. This emerging threat may be reflected in terms of lower lethality but greater numbers of primary blast wounded and significantly increased medical workload.

Chemical warfare

Since World War I, chemical warfare has been publicly held in disrepute by most political and military leaders. Evidence accumulating over the course of the last 50 years has called into question any false sense of security that might have developed regarding public pronouncements about the development of offensive chemical warfare capability and its application for military purposes. The reported use of chemical agents and toxins in Southeast Asia by Vietnamese forces, the confirmed use of agents by Egypt against Yemen and later by Iraq against Iranian forces, and the probable use of agents by the Soviets in Afghanistan indicate a heightened interest in chemical warfare as a force multiplier and to counter battlefield advantages associated with advanced technology weapons in both the international and national military or political arenas.

Combat stress, battle fatigue, and continuous operations

Global mobility of U.S. forces is a major factor in United States political and military strategy. Alerted forces may be required to operate without rest for extended periods of time during mobilization, staging, air-transport, and combat insertion into hostile areas. Modern combat, with its increased lethality, rapid maneuvers, application of sophisticated skills, the constant threat of the use of unconventional weapons, and day/night, all weather operations will stress soldiers to the limits of their endurance. These factors can become the primary agents of mission failure. Under these conditions, stress, as well as fatigue, becomes a major contributor to degradation of force performance and the number of casualties seen by the combat health support system.

Directed energy sources

These devices generate and illuminate a target with coherent radiation in order to induce electronic upset, thermal or structural damage, and thereby cause mission failure. The radiation is of three types: radio frequency, laser, and charged particle beam. The principal directed energy threat in the near-term is from the use of laser devices, such as laser range finders or target designator. Soldiers may be wounded either coincidentally with normal use of these devices or when they are used intentionally in an antipersonnel role.

Echelons (levels) of care

The combat health support (CHS) system is built around levels, or echelons, of care on the battlefield. Each echelon (level) of care reflects specific capabilities of medical support. These capabilities will be contained within the expanded capabilities of the next higher echelon (level).

Echelon (level) I. This echelon (level) of care is provided by designated individuals/elements organic to combat and combat support organizations. It may also be referred to as unit level medical support. This medical treatment is best described as advanced trauma management

Echelon (level) II. This echelon (level) of care is characterized by the medical support provided by divisional/nondivisional medical companies. This may also be referred to as division level medical support. This medical treatment consists of advanced trauma management, minimal nursing care, and a limited diagnostic capability with its X-ray and laboratory equipment. It also possess limited capabilities for emergency dental treatment.

Echelon (level) III. At echelon (level) III medical organizations, the patient is treated in a hospital that is staffed and equipped to provide medical care to a variety of wounds, injuries, and illnesses. This level of care is provided by hospitals located within the corps area of responsibility. The primary treatment mission is to prepare patients for evacuation, and then return to duty those patients that are able to perform minimum mission essential tasks.

Echelon (level) IV. At echelon (level) IV, the patient receives medical care in a hospital that is staffed and equipped to provide both general and specific medical and surgical care. These hospitals are

normally found in theater, at echelons above corps. The primary treatment mission of these hospitals is to provide an enhanced stabilization capability, so patients can be evacuated over extended distances.

Echelon (level) V. Echelon (level) V care is generally characterized by definitive care provided to all categories of patients by CONUS hospitals.

Environmental extremes and battlefield hazards

Heat, cold, humidity, high terrestrial altitude, and environmental pollutants are environmental factors that may pose significant health hazards to an unacclimated, unprepared, and/or ill-conditioned military force. Other battlefield hazards, such as those generated by our own weapon systems and equipment, or poisonous plants, animals, and insects, when combined, are a source of nonbattle injuries against which the soldier must be protected. Preventive measures against these hazards may involve engineering and design solutions, personal protective equipment, or leadership and training solutions. Many nations of the world where the United States has vital national interests have areas of high altitude, humidity, and extremes in temperature. These areas include countries with year-round tropical climates and extended rainy seasons (e.g., Panama and the Philippines), as well as areas with harsh cold winters (Korea and Northern Europe).

Flame and incendiary weapons

Flame and incendiary systems are effective antipersonnel and antimateriel agents on the battlefield. Early generation weapons and munitions are still to be found in the armies of developed nations. Two examples include napalm and white phosphorous fill for aerial delivered bombs. New generation weapons and flame/incendiary agents are being fielded. Examples of some of the newer systems include the Russian flame projectile systems. Possible uses of flame and incendiary weapons include the clearing of difficult defensive positions, such as strong points, caves, bunkers, buildings, and against soft shelter and vehicular targets. Flame has also been used quite effectively in previous conflicts in an antitank role. Flame may also be used as an effective obstacle or barrier.

Joint operations

Joint operations are military actions performed by significant elements of two or more U.S. services. Joint operations may be conducted by joint forces, service forces within a joint force, or service forces in relationships (e.g., support, coordinating authority), which, of themselves, do not create joint forces.

Medical communications for combat casualty care (MC4)

The system of technologies that will be integrated into all echelons of CHS. The technologies will include enhanced monitoring of the soldier on the battlefield, audio and visual mentoring of medical staff on the battlefield, teleconsultation between the different echelons of care, enhanced enroute care, the use of evacuation capsules and telesurgery.

Medical threat

Medical threat is the composite of all ongoing or potential enemy actions and environmental conditions that will reduce combat effectiveness through wounding, injuring, causing disease, and/or performance degradation.

Misconduct stress behavior

Misconduct stress behavior (MCSB) can occur at all levels of intensity. However, MCSB tends to appear more frequently in low-intensity unconventional situations. MSB includes disobedience, desertion, self- inflicted wounds, substance abuse, and other related behaviors. Once misconduct has occurred, medical responsibility is limited to treating medical problems resulting from the behavior. The administration of discipline and punishment is a command responsibility. However, early recognition of the causes of stress in provoking misconduct can assist the command in applying preventive measures.

Modularity
Modularity is the process of designing organizational elements that functionally represent the whole organization. Modules created in the medical reengineering process are designed using this principle. This permits the commander to detach functions and capabilities from a parent unit for deployment into a contingency force. These elements are capable of stand alone operations, and support the concept of split based operations. Further, the detachment does not degrade the parent unit's capability of further activity. The elements reflect the essence of the parent, are interchangeable, expandable, and tailorable to meet changing missions. Modularity permits rapid identification of appropriately sized and properly supported mission oriented forces capable of deployment and employment. Under this definition of modularity, there is a certain degree of redundancy required, which may increase the personnel resources, among others, that may be needed in the force structure.

Module
An organizational element constructed with discrete elements of specific capabilities. The element is designed to facilitate both battlefield economies of force and limited term task organization. A module does not necessarily reflect the complete essence of the parent unit. Additionally, the deployment of a module may considerably degrade the parent unit's ability to function. Some of these modules, created before the concept of modularity was developed, may remain in the force structure. Examples are treatment squads and ambulance squads.

Multinational operations

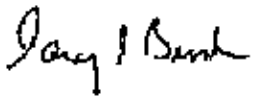
An operation conducted by forces of two or more nations. An operation conducted through a formal arrangement is termed a "combined" or "allied" operation. Military action in a temporary or informal arrangement for common interests is termed a "coalition" operation. Forces and commanders can similarly be described as multinational, allied, combined, or coalition, as appropriate.

Naturally occurring disease

Naturally occurring diseases, also referred to as endemic diseases, represent a significant threat to U.S. forces deployed outside CONUS. Historically, infectious diseases have been responsible for more lost foxhole days than battle injuries. Many naturally occurring diseases have short incubation periods and may cause significant numbers of casualties during the first several days of a deployment.

Nuclear weapons
Since the breakup of the Soviet Union, the number of countries with known nuclear capable military forces has almost doubled. Available information suggests that a number of countries in the Middle East, Asia, and Africa may have nuclear weapons capability within the next decade. In addition to casualties, a nuclear weapon detonation can generate an electromagnetic pulse that will result in catastrophic failure of electronic equipment components.

FOR THE COMMANDER: JAMES J. CRAVENS JR.
OFFICIAL: Major General, GS
Chief of Staff



GARY E. BUSHOVER
Colonel, GS
Deputy Chief of Staff
for Information Management

ANEXO J

TRANSPORTE E REABASTECIMENTO NO CAMPO DE BATALHA

FOREWORD

U.S. National and military strategy is changing dramatically in response to massive global political and economic turbulence. This fundamental change calls for the U.S. to have flexible forces that can deploy rapidly. Further, the change in the international political situation and shift toward domestic priorities mean that the defense establishment will have to manage its assets more efficiently and effectively. This combination of factors requires the Army to improve in-theater distribution.

During Operation Desert Shield/Storm (ODS/S), over 40,000 containers and 250,000 463L airlift pallets were shipped to Southwest Asia (SWA) between August 1990 and March 1991, proving again that materiel can be quickly moved. It was also demonstrated, however, that the in-theater link of the distribution system (which is responsible to control and move supplies from the air/seaport of debarkation to the user) was not equipped nor manned to manage the volume of materiel.

This document provides a conceptual framework for the accomplishment of battlefield distribution support for the Force XXI Army. It is based on historical lessons learned and has been adjusted to fit the realities of the current world. It will require additional adjustment. The concept facilitates the type of evolutionary and innovative approach required of not only the leadership in future military operations, but their supporting logisticians as well.

The Battlefield Distribution concept provides continuity of logistics command and encompasses the distribution of materiel, equipment, personnel, and soldier support items through the logistics pipeline. While this concept limits itself to distribution within the theater of operations, it recognizes that all strategic logistics agencies play a vital role in the success of Battlefield Distribution operations.

Department of the Army
Headquarters, United States Army
Training and Doctrine Command
Fort Monroe, Virginia 23651-5000

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Military Operations

BATTLEFIELD DISTRIBUTION

Summary. This pamphlet serves as the basis for developing doctrine, training, leader development, organizations, and materiel changes focused on soldiers (DTLOMS) requirements and solutions for future logistics distribution operations in support of the force projection Army. This concept links the strategic, operational, and tactical levels of logistics, which provide logistical distribution from the source to the user. Battlefield distribution (BD) enables U.S. Forces to properly request, receive, redirect, maintain, distribute, control, and retrograde within a single distribution system. This will maximize throughput and ensure continuous and timely visibility of units, personnel, and unit/sustainment materiel moving within the area of operations. BD will provide the combatant commanders with fully integrated distribution management.

Applicability. This pamphlet applies to all DOD activities which develop DTLOMS requirements and products.

Suggested improvements. The proponent of this pamphlet is the Deputy Chief of Staff for Combat Developments. Send comments and suggested improvements on DA Form 2028 (Recommended Changes to Publications and Blank Forms) through channels to Commander, TRADOC, ATTN: ATCD-BP, Fort Monroe, VA 23651. Suggested improvements may also be submitted using DA Form 1045 (Army Ideas for Excellence Program (AIEP) Proposal).

Availability. This publication is available on the TRADOC homepage at http://www-tradoc.army.mil.

Chapter 1
Introduction

1-1. Purpose. This pamphlet describes the concept for BD.

a. The concept describes the definition of BD, why BD is needed, and describes the major approaches to achieve effective distribution operations. It also describes the key conceptual characteristics of BD, and establishes the capabilities the Army requires to perform distribution of materiel and services in support of the full range of military operations.

b.The concept also assesses the impact of BD on DTLOMS.

1-2. References. Required publications used in this pamphlet are listed in appendix A.

1-3. Explanation of abbreviations and terms. Abbreviations and special terms used in this pamphlet are explained in the glossary.

Chapter 2
Overview

2-1. Why the concept is needed. As articulated in Field Manual (FM) 100-5, Operations, future military success requires the Army to rapidly project lethal and survivable combat power into any part of the world and sustain forces across a broad range of military operations. Recent operatirons such as Urgent Fury, Just Cause, Desert Shield/Storm, and Restore Hope, have demonstrated the Army's capability to deploy when required. These operations, however, underscored the deficiencies within the current logistics systems. Redundant, multi-layered support systems and structures developed to support the general conflict mold of the Cold War are now inadequate. These outmoded systems create resource demands that can no longer be supported. For this reason, Army logisticians must examine the way we do business. The challenge is to keep those useful practices, and to establish new ways of doing business where needed. The Army must develop a distribution system that is fully capable of supporting the entire range of U.S. force projection operations. The BD concept establishes the framework for Army logisticians to improve upon the current distribution system. BD requires innovative doctrinal approaches, reengineered combat service support (CSS) organizations, highly trained soldiers, and advances in technology and communication systems commensurate with total force improvements. BD development strategies will follow the basic premises outlined below.

a. The focus of this concept is on battlefield distribution operations in a force projection theater. The framework for BD operational capability requirements is based upon a deployed Army corps, with sufficient echelons above corps (EAC) structure, to perform necessary theater strategic and operational logistics functions in support of joint and multinational forces.

b. BD will capitalize upon modular designs, capabilities-based force tailoring, and technology enhancements to support future contingency operations involving U.S. and allied forces. These deployments will range in size from a reinforced battalion in support of a lesser contingency to multiple

corps operating under an Army Service Component Commander in support of a major theater war (MTW).

c. BD procedures will build upon the successful practices of Army operational units such as the "Hub and Spoke" distribution system established in Europe. BD will also incorporate technology enhancements and benchmark commercial business practices to the extent practicable. Benchmarking commercial business practices means that the Army will attempt to capture the best of current ideas, management practices, and technology stemming from commercial business for potential use in BD, while recognizing the fact that militarily unique circumstances often preclude total imitation of many of those same successful practices.

d. In order to establish and maintain an effective in-theater BD system, there must be seamless connectivity between the strategic and operational agencies/activities. BD will necessitate a review of strategic systems and their linkages to operational sustainment organizations/activities in theater.

2-2. Assumptions.

a. Threat. BD alone is not intended to defeat a threat; it increases the capability of forces to defeat any threat. BD will operate in all areas of the world throughout the spectrum of contingency missions. Units performing BD operations will be vulnerable to the entire spectrum of threat weaponry (conventional, unconventional, and weapons of mass destruction) and forces. The likelihood of encountering threat capability will vary depending on the level of conflict and the region of the world in which operations occur. The most serious threat to BD is the interruption of the flow of information.

b. Future operations. Future logistics operations will be joint and combined/ multinational in nature and may involve other U.S. government departments and agencies. Future combat operations and military operations other than war (MOOTW) will be conducted with forces varying in size from an enhanced battalion up to one or more conventional corps. In addition, there may be simultaneous operations in different locations around the world. BD is focused on a conventional corps structure and will have the flexibility to support all types of operations including those that involve current forward-deployed forces.

c. The Reserve Component (RC). The Active Component (AC) will rely on both the U. S. Army Reserve (USAR) and the Army National Guard (ARNG) to provide a number of logistical functions in support of combat operations and MOOTW. Given a shrinking force structure and declining defense expenditures, this reliance on RC logistical capabilities will most likely increase in the future. The RC will continue to maintain a significant portion of the Army's logistics force structure and will require concurrent fielding of new equipment and technologies with the AC.

d. Civilians in support of military operations. Department of Defense (DOD) civilian personnel, personnel from non-DOD organizations, civilian contractors, and elements of civilian host nation support organizations will continue to provide an ever-increasing number of capabilities in support of military operations. These civilian personnel may be incorporated into the military command and control structure in an area of operations. Integration and use of these non-uniformed or nontraditional support personnel will have major command and control and logistic support impacts. These impacts will require civilian issues to be addressed during the planning and execution of operations.

e. Technology. Application of technologies to enhance communications and information flow is vital to the concept. The Army will continue to leverage existing and emerging technological capabilities to enhance support operations across the broad range of military operations. Source data automation will be used to the maximum extent possible to eliminate redundant tasks and operations.

f. Army role. The Army will continue to fulfill Title 10 responsibilities and other Wartime Executive Agency Requirements (WEAR), and may also be required to play an increasing role in future land force logistics operations.

2-3. Limitations. Successful long-term implementation of this concept is affected by the following factors:

a. Timely deployment of units, personnel, and equipment to perform BD functions (availability of strategic lift).

b. The fielding of state-of-the-art technologies such as Total Asset Visibility (TAV), Automatic Identification Technology (AIT), Automation Information Systems (AIS), and reliable voice and data communications systems.

Chapter 3
Concept

3-1. General. Rapid force projection from continental United States (CONUS) or forward deployed locations, extended lines of communication, and potential operations in logistically bare-based areas require Army development of a distribution system that is versatile, deployable, and expandable. Army logisticians must create a modular distribution system which weaves the current strategic, operational, and tactical levels of logistics into a seamless continuum. In this manner, the emphasis of Army logistics will shift from echeloned support to projecting and sustaining force capability.

3-2. Considerations for battlefield distribution.

a. BD concept definition and description.

(1) Definition. Defining battlefield distribution as it is applied in this concept is critical. The following definition of BD is the result of combining the definitions of "distribution" and "distribution system" in Joint Publication 1-02 with the conceptual requirements of future battlefield logistics support:

> **BD is a holistic concept of information exchanges, management procedures, functional organizational designs, and reengineered operational processes which enable U.S. forces to properly request, receive, redirect, track, distribute, control, and retrograde materiel, services, units, and personnel within a single distribution system.**

(2) Concept description. To achieve effective BD operations, Army CSS personnel will need to examine the processes of materiel management, movement management, and battlefield customer support operations. These processes will require modification in order to incorporate the characteristics of BD. The heart of BD improvements focuses on technological enhancements that will be provided to the commanders, managers, and operators tasked with distributing materiel, services, and personnel across the future battlefield.

(a) Key fundamentals. The key fundamental requirements of BD are an integrated architecture of management information systems, the merging of materiel and movement management systems, and tailored logistics force packaging. It is of utmost importance that technological enhancements be developed concurrently with organizational improvements. The BD management system will utilize state-of-the-art technologies such as communication enhancements, automatic identification technology, automated source data input, and integrated standard Army information management systems to create a seamless flow of management information from the strategic to tactical levels of logistics. BD will streamline requisition, receipt, movement control, redirection, distribution, redistribution, and retrograde of all classes of supply and equipment for the deployed combat force. The merging of materiel and movement management systems will allow BD managers, in conjunction with the Commander in Chief/Commander, Joint Task Force (CINC/CJTF) staff, to synchronize sustainment materiel flow with reception and onward movement operations to ensure a continuous flow of units, personnel, and materiel through ports of debarkation to the correct destination. Tailored, capabilities-based logistic forces will deploy rapidly to the area of operations and sustain combat forces anywhere in the world.

(b) Linkages. At the strategic level, BD materiel managers will monitor and assess usage factors and operating tempo (OPTEMPO) in the area of operations and project sustainment materiel

requirements. The flow of materiel will be coordinated with the senior operational logistician to deliver the right quantity at the right time. Strategic level operators will leverage technology to sustain projected forces while requiring less physical resources in theater. As outlined in the Army Strategic Logistics Plan (ASLP), the strategic sustainment base will perform as the "national provider" for the projected force. Strategic agencies/activities outlined in the ASLP will work closely with the rear sections of split-based Army units to ensure that the sustainment requirements of the projected force are met in the most effective manner possible. BD enhancements will allow operational logisticians to properly size and locate stocks in an area of operations and increase customer demand satisfaction without increasing strategic lift requirements. This is accomplished through a combination of increased velocity of materiel management information from the sustaining base and total visibility of all materiel assets, both in-stock and in-transit. Improved velocity management and properly sized/located authorized stockage lists (ASLs) will replace the requirement for multiple, layered stocks at each level throughout the corps and division units. Operational logisticians bridge the gap between the strategic sustainment base and the customer located at the tactical level. AIT and AIS technology enhancements provide near real-time flow of requisitions, provide BD managers total visibility of all materiel assets from strategic to tactical level, and allow rapid throughput of materiel directly to the requestor (see fig. 3-1).

b. Automation and information. BD must incorporate communications enhancements, automatic identification technology, automated source data input, integrated information management systems, and distribution platforms that are fully integrated and compatible with strategic, operational, and tactical systems.

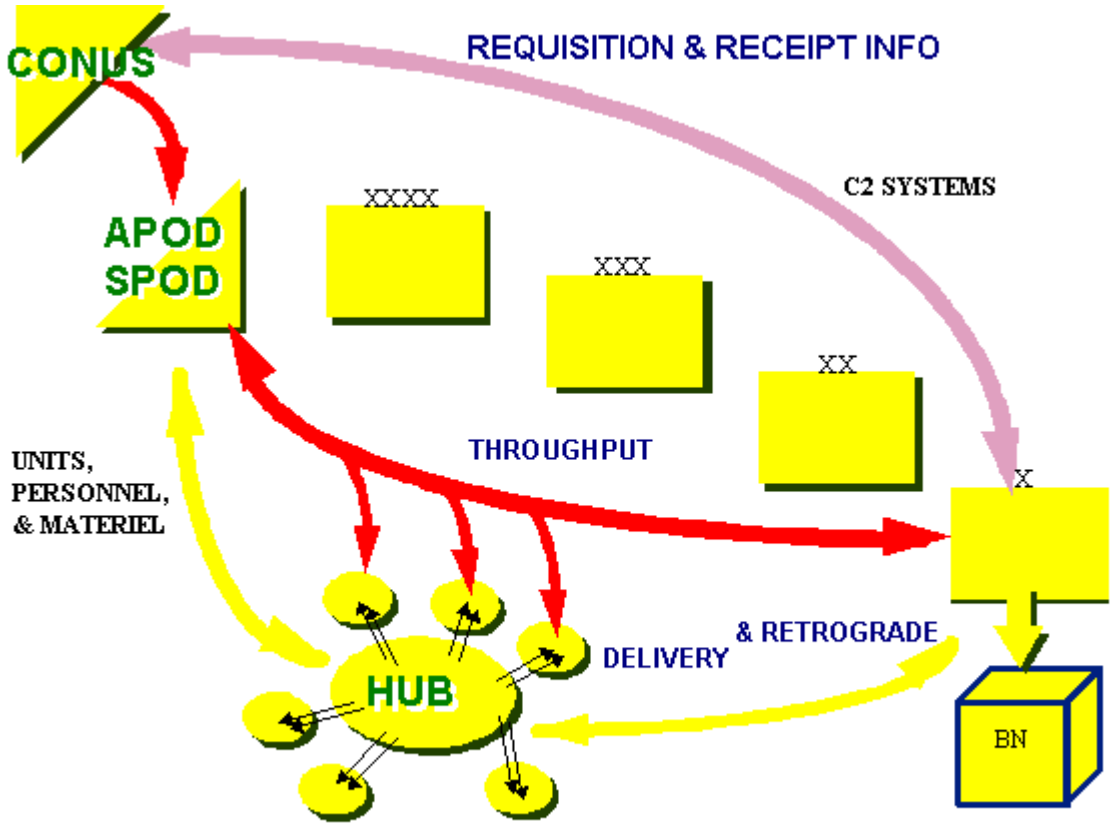


Figure 3-1. Requisition and receipt information.

c. Characteristics of BD.

(1) Merging of materiel and movement management under a single distribution manager at each echelon. Effective distribution operations will require continuous interface between movement and materiel managers. BD also requires a single person to be responsible for distribution management at each echelon. This single manager will supervise the interface between movement control and materiel management, and direct overall logistics support operations. The merging of these management functions will be attained through a combination of automation/communication links and staff supervision from the designated single distribution manager.

(2) Use of a hub and spoke distribution system. Distribution within the area of operations will focus on rapid port clearance through the use of an inland distribution terminal that is connected with any number of supply support activities (SSA) such as the "Hub and Spoke" operation currently used in Europe. The synchronization of this hub and spoke distribution system will be accomplished through the use of mode operators, voice/data communications, and AIS technology enhancements.

(3) Tailored, capabilities-based logistics support for varying force projection operations. Logisticians must be capable of rapidly tailoring organizations to perform the full range of force projection operations. BD will rely upon a well-designed "Theater Force Opening Package" to provide the initial infrastructure to conduct port opening, reception and onward movement, and initial sustainment operations during a force projection operation. Capabilities-based logistics units, capitalizing upon modularity and split basing, will be assembled and deployed rapidly to provide distribution support for the deployed combat force. This tailoring will be applicable in war as well as MOOTW.

(4) Reduction in layering of supplies. The BD system will rapidly identify requirements and fill them at unprecedented levels of customer demand satisfaction. TAV/in-transit visibility (ITV), integration of materiel and movement management, and properly sized ASL will reduce stockage levels throughout an area of operations. The single distribution manager level will require visibility over all stocks and direction/redirection authority to fill demands.

(5) Increased throughput operations. Unitized packing of materiel by strategic supply activities, TAV/ITV, efficient transportation mode operations, and improved visibility of unit locations on the battlefield will increase the instances where shipments received at ports of debarkation can be throughput directly to consignees.

(6) Improved information flow. Technology enhancements and improvements in communications for CSS units will be required to increase the velocity and accuracy of information flow throughout the strategic, operational, and tactical levels of logistics. These enhancements are required in standard Army management information systems (STAMISs), source data automation systems, command and control systems, and voice/data communications.

(7) Near real-time asset visibility. Key to the success of BD are technology enhancements that will provide near real-time asset visibility. Near real-time visibility provides the distribution manager the capability to rapidly locate assets then direct materiel release orders and the necessary transportation to rapidly deliver the item to the requestor.

(8) Theater force opening package. Recent force projection operations have demonstrated that insurmountable backlogs may occur at ports of debarkation if the right units, equipment, and technology to perform port clearance and initial logistics sustainment operations are not deployed early in the flow. BD will require a tailored "Theater Force Opening Package" that is capable of deploying rapidly and establishing the necessary terminal service operations, transportation mode operations, and inland distribution terminal operations to keep materiel moving through the ports. Port opening packages are deployed as part of the tailored Theater Force Opening Package.

(9) Integrated STAMIS. BD requires a single integrated STAMIS to perform materiel management. A joint integrated STAMIS will ultimately allow the Army to more effectively perform executive agent logistic sustainment responsibilities to other U.S. services.

d.Objectives of BD are:

(1) Improved combat capability.

(2) Improved customer confidence.

3-3. Distribution management. Distribution management is the planning and coordinating for the delivery of units, personnel, and materiel to the area of operations, ensuring the delivery of assets to their final destination, and coordinating retrograde operations. BD managers at each level will be linked via an integrated communications network using AIS, AIT, and voice systems. Distribution management functions will be performed from the highest level of logistics command in an area of operations, through each subordinate echelon. The cornerstone of successful BD is the merging of materiel management functions with movement management functions at each level under the auspices of a single distribution manager.

3-4. Flow of materiel and information. The effective flow of materiel and information are vital to the BD concept. Materiel and information systems must function in an uninterrupted continuum from the strategic level down to the combatant user. This section describes the BD requirements for both materiel and information flow at the strategic, operational, and tactical level of logistics.

a. Flow of materiel.

(1) Strategic/operational. Sustainment materiel flows from the strategic sustaining base. Unit equipment flows from the force projection platform (CONUS, Europe, Korea, Alaska, Hawaii, or other areas where forces may be deployed) so as to arrive in the theater of operations by the CINC's required availability date. BD managers and operators at the strategic and operational levels will work together to ensure that logistical sustainment keeps pace with the tempo of the deployment operations. Prior to deployment, key strategic agencies such as U.S. Transportation Command (USTRANSCOM), Defense Logistics Agency (DLA), U.S. Army Materiel Command (AMC), and U.S. Army Medical Materiel Agency (USAMMA) will communicate with operational organizations such as the INC/CJTF staff, the theater level logistics support command, the Materiel Management Center (MMC), and the Logistics Support Element (LSE) to identify requirements and effect the flow of materiel. During the initial stages of deployment, a tailored Theater Force Opening Packages is deployed to provide initial logistics command and control, operate ports of debarkation, support reception and onward movement operations, and provide initial sustainment for the deployed force. During the sustainment phase, a mature distribution system provides the deployed force with rapid replenishment of materiel, timely relocation of units, and effective retrograde operational support. All modes of transportation will be used in the materiel distribution process to include: rail, barge, inter-theater air, airdrop, host nation assets, and any other available means of delivery within theater. Mature distribution operations are centered around a hub and spoke system. The hub and spoke system is further described in paragraph 3-5 below. Air transportation will continue to serve as the mode of choice for emergency and critical materiel delivery. During the reconstitution and redeployment phase, BD managers will develop and support plans to relocate or redistribute materiel to reconstituting units and redeploy materiel and equipment to strategic storage sites or home station.

(2) Operational/tactical. Both unit and sustainment materiel that flow to an area of operation (AO) will be received and processed based upon instructions from the single distribution management agency/activity. Unit materiel and equipment will be received by the theater distribution system and

delivered to owning units as they arrive in theater. The distribution system will be capable of temporary storage of unit materiel and equipment to accommodate operational employment decisions. Sustainment materiel designated as theater stockage will normally bypass intermediate nodes and be delivered directly to designated storage sites. The automated, interlinked distribution management network is updated as supply accounting information is processed by the receiving storage site. BD provides forward support to employed forces by rapidly moving materiel and services to the combatant, bypassing intermediate nodes to the extent possible. Single consignee materiel will bypass intermediate nodes and be delivered directly to the lowest level customer SSA. Sustainment materiel packaged for multiple customers will be initially handled by a distribution terminal that segregates, reconfigures, documents, and then ships the materiel to the lowest level customer SSA. The elimination of batch requisition processing will provide near real-time flow of requisitions and materiel management information and, combined with increased velocity of materiel to the requester, supplant the requirement for maintaining redundant items on ASL in the Division and non-Division SSAs. Rapid, direct delivery of sustainment materiel will allow the logistician to support the combatant commanders while relieving them of the multiple, layered stockpiles of materiel.

b. Flow of information. BD, as with any effective distribution system, relies heavily on timely and accurate information flow. The interconnectivity of the various information systems within the supporting communications network is critical to BD. Communications must provide reliable connectivity for the seamless flow of information throughout the strategic, operational, and tactical continuum.

(1) The flow of information must be supported by technology improvements in AIT, AIS, and STAMIS. CSS information will enter the theater level distribution management systems through strategic information systems. There may be any number of strategic (including joint) systems located in the theater in support of the CINC. At air, water, and inland terminals, supply activities, transfer points, and other critical nodes within the theater, AIT will be used to retrieve data and update the information management systems. Improved movement tracking systems will connect the vehicle operators with the mode managers at all levels throughout the theater to enhance the capability to expedite, hold, or divert shipments. Management information systems will feed data as required for command capsulation and presentation (see figure 3-2). Management information will be entered into the tactical communications user system and relayed through a gateway (in-theater) back to the sustaining base, providing a seamless flow of information throughout the system.

(2) Information is passed between distribution management agencies/activities at every level throughout the system. Command and control information will be provided to the operators of the BD system through voice data communications and STAMIS interconnectivity. Functional materiel and movement management teams will be located at critical logistical operational points throughout the area of responsibility (AOR) to provide the link to centralized materiel and movement agency/activities.

3-5. Hub and spoke distribution system. The hub and spoke distribution system will be the focal point of BD at the operational level. This system may be modeled on the hub and spoke distribution system developed in Europe and benchmarked, to the extent possible, on industry standards set by commercial business corporations. Hub and spoke is based on a central terminal (hub) that receives, repacks, manifests, stages, and redirects cargo over established routes (spokes) to and between customer units (satellites). A hub and spoke system will be established as part of BD and will provide major enhancements to operational logistics support. The hub and spoke distribution system will be managed by the single distribution management agency/activity. The Theater Force Opening Package will include modular organizations to establish this hub and spoke system and perform critical initial logistics support to early deployed forces.

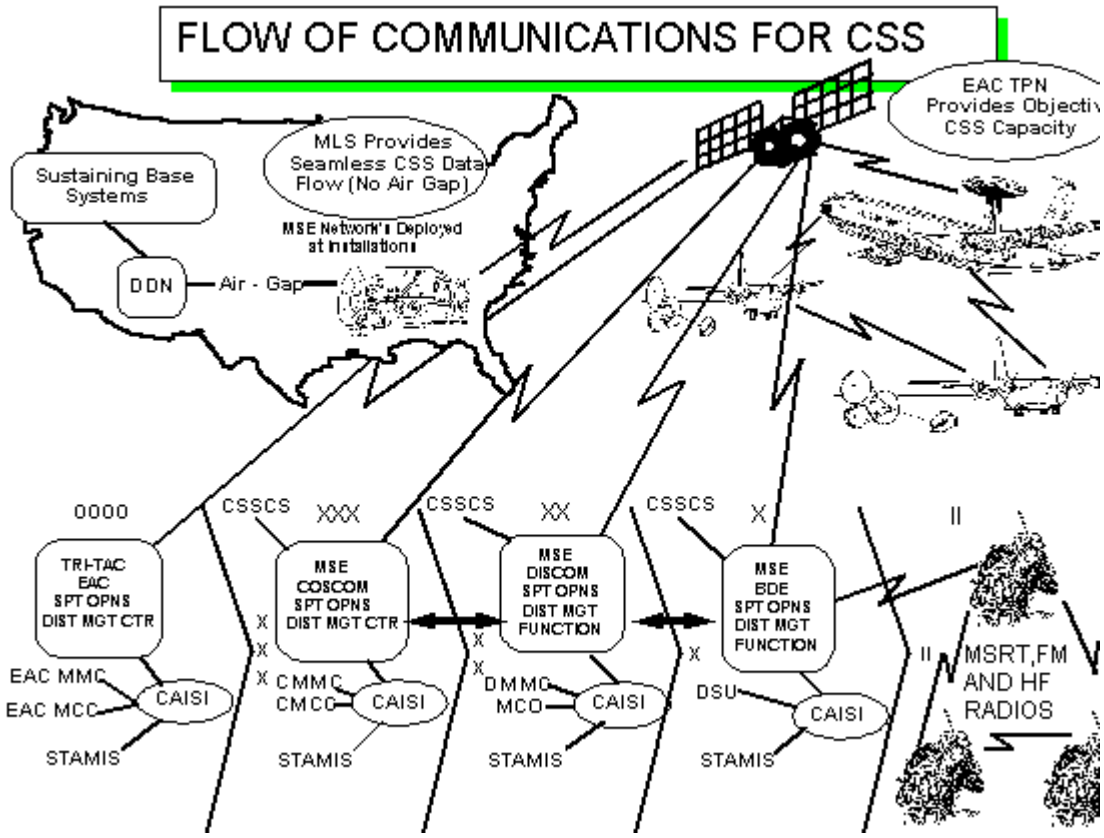


Figure 3-2. Flow of communications for CSS.

3-6. Force projection. BD operations will encompass the full range of the force projection continuum. BD organizational structure must support the full spectrum of contingencies outlined in the Defense Planning Guidance including deployments in support of two nearly simultaneous major theater wars. BD will support CSS principles and imperatives by focusing on delivering the right materiel to the combatant in a timely manner. During the predeployment phase of a force projection operation, a thorough Logistics Preparation of the Theater (LPT) is required. BD managers and operators will use the LPT to establish the initial theater force opening package and other early flowing organizations required to conduct initial unit reception operations and to distribute materiel and services to the early deploying combat force. During the deployment phase, BD organizations will be deployed in a manner that supports the deployment milestones established in the Army Strategic Mobility Plan (ASMP). During the sustainment phase, BD managers and operators concentrate on the establishment and operation of an effective hub and spoke distribution system. The flow of sustainment materiel becomes the major focus of BD operations during this phase. As the OPTEMPO subsides at the conclusion of operations or in the event of a second regional contingency, emphasis shifts to redeployment from the current area of operations to either return to home station or deploy to another area of operations.

3-7. Future operational capabilities (FOC).

Battlefield Distribution (FOC CS 98-03)

Description: Capability to request, receive, and redirect, maintain, distribute, control, and retrograde logistics within a single distribution system. BD will maximize throughput and redeployment to ensure timely visibility of units, personnel, sustainment materiel, and service moving to, from, and within the AO. Will provide fully integrated distribution management.

3-8. Battlefield distribution elements. The following elements are required to accomplish BD on the Army XXI battlefield.

a. Deployability. BD requires rapidly deployable, capabilities-based organizations that make effective use of strategic lift to both project and sustain the force.

b. Automation and communications:

(1) AIS. An interoperable family of automated information systems will provide the required supply, transportation, and maintenance capabilities for support of land combat forces. The heart of AIS is the STAMIS. STAMISs, fully integrated throughout the strategic, operational, and tactical levels of logistics, are crucial to successful BD operations.

(2) AIT. A family of technologies that support source data automation through various media that facilitates the rapid collection, consolidation, storage, and retrieval of data to and from the STAMISs. BD will incorporate AIT systems and use them together in a complimentary manner. AIT provides a medium for the storage of source data to facilitate rapid and accurate data acquisition, and retention and retrieval to the STAMIS. AIT systems include the technology to provide TAV and ITV to BD managers.

(3) Improved communications. Timely voice and data communications systems are required to provide the interconnectivity between the various BD management, information, and command and control systems.

(4) Strategic systems. AIS must be interfaced at the strategic level. These systems must also be interfaced with operational/tactical systems.

c. Split-based capability. BD requires modular organizational structures that are capable of split-based operations. BD will benchmark the approved Corps Materiel Management Center (CMMC) Split Operations Force Design Initiative in selected organizations that perform command and control and management functions.

d. Modular design. BD requires application of modularity to operational force structure. Modular designs, such as the one used in the CMMC split operations concept, will provide the basis for tailoring logistics force packages to meet a full range of force projection operations.

e.Prepositioning Army reserve stock. BD will rely on prepositioned war reserve materiel to perform theater force opening and initial sustainment operations while minimizing impacts upon strategic lift.

f. Sustainability. BD requires equipment and organizations that are capable of prolonged operations under austere and adverse conditions.

g. Forward support. BD requires information systems and distribution operational procedures that will provide forward support to combatant forces. BD must rapidly move materiel from the national sustainment base to the fighter in a manner that improves combat capability and strengthens customer confidence in the logistics system.

3-9. Relationship to other concepts.

a. Force XXI operations, TRADOC Pamphlet 525-5. BD supports the Force XXI requirement to rapidly project forces throughout the world and meet any level of threat.

b. CSS Battle Dynamic Concept, TRADOC Pamphlet 525-200-6. The CSS Battle Dynamic Concept challenges logisticians to establish new ways of doing business where needed. It challenges Army logisticians to create a system in which the realities of force projection necessitate the weaving of the

current strategic, operational, and tactical levels of logistics into a seamless continuum. BD meets these challenges by providing a system which fully integrates distribution management.

c. Concept for modularity, TRADOC Pamphlet 525-68. BD reinforces the Modularity concept by providing for the logical insertion of units into the theater. MMCs will be modularized to facilitate split-based operations.

d. Vision of combined arms support. This Combined Arms Support Command (CASCOM) Vision provides logistics combat developers the conceptual framework of future logistics support during U.S. force projection operations. BD supports the major characteristics of envisioned future logistics operations by providing the framework for the melding of strategic, operational, and tactical logistics into a seamless continuum.

e. Split-based operations. One of the aims of BD is to achieve a fully integrated (materiel and movement) distribution system. Split-based operations allows routine management functions to be accomplished in CONUS or outside the continental United States (OCONUS) while critical wartime functions can be projected forward early in an operation. The split-based operations capability also allows for modular growth and tailoring of the logistics elements deployed in support of the force that is being projected. Split-based operations will support BD by providing the modular materiel management cells to be integrated with movement functions and projected forward throughout the battlefield.

f. Army centralized distribution system (ACDS). ACDS and its principles were incorporated into the BD concept. The ACDS concept collocated the echelons above corps (EAC) Movement Control Agency and Materiel Management activities, and established a central receiving and shipping point (CRSP) for containers that required transshipment.

g. Contingency contracting. Contingency contracting bridges gaps that may occur before sufficient organic support units arrive, or before Logistics Civilian Augmentation Program (LOGCAP) resources arrive in the AO. It is an effective force multiplier of CSS in the initial phases of supporting an operation.

h. TAV and ITV. The TAV concept was written by the Strategic Logistics Agency and consists of two subordinate parts, asset visibility and in-transit visibility. Asset visibility covers resources in inventory, or static to the visibility system, and in-transit visibility which, as the name implies, covers resources in motion throughout the strategic, operational, and tactical continuum. The TAV concept is being translated into a computer software system which can track resources throughout the world. This software will support the BD requirement to be able to identify, cross level, ship, or redirect assets to provide immediate support to the combatant.

i. Integrated Sustainment Maintenance (ISM), TRADOC Pamphlet 525-81. ISM is a supporting, if not parallel, system linked to BD, working to increase the use/availability of assets in the supply system, and limit or reduce procurement as a first source of supply. The ISM initiative focuses on centralized management and workloading of all sustainment maintenance activities under a single manager.

j. Global Combat Support System - Army (GCSS-A). GCSS-A is a CASCOM initiative that addresses STAMIS integration, a critical piece of BD. Logistics, finance, personnel, and medical STAMISs must all interface to operate seamlessly with each other and the strategic systems supporting them.

k. Defense Finance Battlefield System (DFBS). DFBS is a supporting system to BD which will satisfy Congressional oversight needs by providing rapid retrieval of logistics financial related data.

l. Total distribution program (TDP). TDP is a CASCOM/Logistics Integration Agency program that was initiated based upon lessons learned from Operation Desert Shield/Storm. TDP outlined the total process and functions associated with Army force projection distribution operations. One hundred forty total issues were defined during the TDP study phase. These issues have been worked over the past two years and BD, once introduced as a concept, became a venue for addressing doctrinal and organizational distribution issues. BD will provide high payoff resolution to TDP issues through synergistic employment of materiel, organizational, and doctrinal improvements in distribution operations.

m. Army Strategic Mobility Plan (ASMP). The ASMP establishes time phased strategic eployment objectives to support force projection operations. ASMP deployment milestones provide the correct mix of warfighters and supporters throughout the deployment continuum. BD was developed to support ASMP. BD initiatives such as the Theater Force Opening Package and tailorable, modular organizational CSS structure will be designed to meet deployment timelines established by the ASMP.

n. Army Strategic Logistics Plan (ASLP). The ASLP is the management plan to focus logistics initiatives with the Chief of Staff, Army vision for America's Army: a trained and ready force, capable of decisive victory which serves the nation at home and abroad. ASLP requires the future Army logistics system to weave strategic, operational, and tactical levels into a seamless continuum while losing the constraints of current organizational boundaries. BD supports the ASLP by establishing the requirements for linkages between the many functional proponents and individual commands and agencies which make up the Army's complex logistics system.

Chapter 4
Implications

4-1. Doctrine.

a. A significant doctrinal void currently exists in the discussion of distribution operations. As an emerging concept, BD will impact virtually all levels of logistics doctrine. A BD Special Text or an interim doctrinal publication will be required to proliferate the new doctrine until current doctrinal manuals can be changed. At the capstone level a BD chapter will be added to the following manuals:

(1) FM 100-10, Combat Service Support.

(2) FM 100-16, Army Operational Support.

b. The following manuals will also require changes in varying forms:

(1) FM 1-500, Army Aviation Maintenance.

(2) FM 8-10, Health Service Support in a Theater of Operations.

(3) FM 8-10-9, Combat Health Logistics in a Theater of Operations.

(4) FM 8-15, Medical Support in Divisions, Separate Brigades, and the Armored Cavalry Regiment.

(5) FM 9-6, Munitions Support in a Theater of Operations.

(6) FM 10-1, Quartermaster Principles.

(7) FM 10-23, Basic Doctrine for Army Field Feeding and Class I Operations Management.

(8) FM 10-27, General Supply in a Theater of Operations.

(9) FM 10-52, Water Supply in theaters of Operations.

(10) FM 10-67, Petroleum Supply in Theaters of Operations.

(11) FM 11-30, MSE Communications in the Corps/Division.

(12) FM 12-6, Personnel Doctrine.

(13) FM 19-1, Military Police Support for the AirLand Battle.

(14) FM 19-4, Military Police Battlefield Circulation Control, Area Security, and Enemy Prisoner of War Operations.

(15) FM 29-19, Repair Parts Supply for a Theater of Operations.

(16) FM 54-30, Corps Support Groups.

(17) FM 54-40, Area Support Groups.

(18) FM 55-1, Transportation Operations.

(19) FM 55-2, Division Transportation Operations.

(20) FM 55-10, Movement Control in a Theater of Operations.

(21) FM 55-65, Strategic Deployment.

(22) FM 63-1, Support Battalions and Squadrons, Separate Brigade, and Armored Cavalry Regiment.

(23) FM 63-2, Division Support Command, Armored, Infantry, and Mechanized Infantry Divisions.

(24) FM 63-2-1, Division Support Command, Light Infantry, Airborne, and Air Assault Divisions.

(25) FM 63-3, Corps Support Command.

(26) FM 63-4, Theater Army Area Command.

(27) FM 63-20, Forward Support Battalion.

(28) FM 63-21, Main Support Battalion.

(29) FM 71-100, Division Operations.

(30) FM 100-5, Operations.

(31) FM 100-7, Decisive Force: The Army in Theater Operations.

(32) FM 100-11, Force Integration.

(33) FM 100-15, Corps Operations.

(34) FM 100-17, Mobilization, Deployment, Redeployment, Demobilization.

(35) FM 100-19, Domestic Support Operations.

(36) FM 100-20, Military Operations in Low Intensity Conflict.

(37) FM 100-23, Peace Operations.

(38) FM 100-22, Installation Management.

(39) FM 100-25, Doctrine for Army Special Operations Forces.

(40) FM 101-10-1/2, Staff Officers Field Manual - Organizational, Technical, and Logistical Data Planning Factors.

(41) FM 700-80, Logistics.

c. Additionally, all TRADOC and Army proponents must review and update doctrinal publications as they pertain to this concept.

4-2. Training. The BD concept will be integrated into all aspects of the Army enlisted, officer, and civilian institutional, mission, and unit training. Training includes programs of instruction (POI), Logistics Programs, Practical Exercises, Military Training Programs, and embedded training. There may be moderate impact on institutional training for enlisted and officer personnel. Examples of training that may require modification are: basic and advanced NCO courses, Officer and Warrant Officer Basic Courses, Officer and Warrant Officer Advanced Courses, Combined Logistics Officer's Advanced Course, Logistics Executive Development Course, and Command and General Staff College. Additionally, the pre-command course will require updating. Simulations, simulators, exercises, and war games must be designed to replicate the operations and organizations described in this concept to include training to support joint, combined, multinational/coalition, and interdepartmental operations during deployment/employment/ redeployment for normal military operations and MOOTW. Unit training should emphasize the requirement to perform core missions while interfacing with other BD organizations to establish and maintain an integrated distribution network.

4-3. Leader development. Commanders and leaders must understand the implementation, operations, relationships, and goals and objectives for the use of this concept. Leaders must have a working knowledge of the distribution systems architecture and capabilities. Formal leader development within the different training and education programs throughout the Army must include a pertinent, meaningful infusion of BD.

4-4. Organization. The current structure of the following units will be examined to determine the impacts of BD upon their mission, organization, equipment, personnel, and doctrinal command/control relationships.

TAACOM MMC	CMMC	MSB
TAMCA	CMCC	FSB
TMMC/MLMC	HQ & SP TRPS, COSCOM	ASB
HQ, & SP TRPS, TAACOM	HHC/MMC, DISCOM	CSG/ASG

BD organizations will require technology enhancements and some modifications to adhere to the characteristics of BD operations. No permanent changes to organizational structure or doctrine will occur until BD is properly tested, demonstrated, and analyzed. The results of Army warfighting experiments (AWEs), technology demonstrations, experimental force (EXFOR) evaluation, and combat developer analysis will be fully considered prior to making large scale force structure changes.

a. Equipment. Highly technical equipment will be needed forward during most operations. Equipment will have to be added to table of organization and equipment (TO&E), obtained through common table of allowances (CTA), or obtained through contract leasing and Army Reserve stocks.

b. Personnel. BD will require minor modifications in personnel composition of current TOEs. It may affect grade structure and density to meet requirements for distribution management integration and technical expertise. It is not anticipated that BD organizational modifications will result in significant additions or deletions in force structure. The overall personnel goal is "zero sum gain."

c. Automation and communications. Automation systems are vital to the success of BD. Documentation of both hardware and software will have to be reviewed. Force projection operations may also require smaller, more portable automation capability. Communications enhancements are also vital to the success of BD. Operational facility (OPFAC) rules governing communications equipment allocations will need to be reviewed/revised to ensure increments/elements receive communications equipment necessary to accomplish the mission.

4-5. Materiel. This concept will require new and additional automation equipment, enhanced communication systems, and integrated STAMISs. Automation and communication are inextricably linked. Distributed communications networks and enhanced command, control, communications, and automation will increase the ability for dispersed operation over greater distances. The Army must continue to exploit technological opportunities to design, acquire, and field more capable support systems to achieve higher productivity in logistics operations. BD materiel initiatives will capitalize upon nondevelopmental item (NDI) technology and commercial off-the-shelf (COTS) products to prevent unnecessary delays in the procurement and fielding process. Technological enablers including those acquired through NDI, COTS, and standard Army research, development, and acquisition must be clearly documented for each type of BD organizational TOE.

4-6. Soldiers. This concept does not require additional military occupational specialty (MOSs) or changes to existing MOSs. Soldier support remains unchanged. The battlefield distribution system will have a positive effect on soldiers both individually and collectively as follows: (1) Improved response times will provide the soldier with the information and materiel needed to perform a mission at the right place, time, and in the right quantity, (2) Source data automation will liminate redundant paperwork and operations, thereby reducing soldier man-hours.

Glossary

Section I
Abbreviations

AC	Active Component
ACDS	Army centralized distribution system
AFM	Air Force Manual
AIT	Automatic Identification Technology
AIS	Automation Information Systems
ALOC	air lines of communication
AMC	United States Army Materiel Command
AMS	Automated Manifest System
AO	area of operation
AOR	area of responsibility
APOD	aerial port of debarkation
APOE	Aerial Port of Embarkation
AR	Army regulation
ARNG	Army National Guard
ASB	Aviation Support Battalion
ASG	area support group

ASL	authorized stockage list
ASLP	Army Strategic Logistics Plan
ASMP	Army Strategic Mobility Plan
AWES	army warfighting experiments
BD	battlefield distribution
CASCOM	Combined Arms Support Command
CAISI	CSS Automated Information System Interface
CINC	Commander in Chief
CJTF	Commander Joint Task Force
CMCC	Corps Movement Control Center
CMMC	Corps Materiel Management Center
COTS	commercial off-the-shelf
CONUS	continental United States
COSCOM	corps support command
CRSP	Central Receiving and Shipping Point
CSB	Corps Support Battalion
CSG	Corps Support Group
CSS	combat service support
CSSCS	Combat Service Support Control System
CTA	common table of allowances
DDN	Defense Data Network
DFBS	defense finance battlefield system
DISCOM	Division Support Command
DLA	Defense Logistics Agency
DOD	Department of Defense
DSU	direct support unit
DTLOMS	doctrine, training, leader development, organizations, materiel, and soldiers
EAC	echelon above corps
EXFOR	experimental force
FM	field manual
FSB	Forward Support Battalion
GCSS-A	Global Combat Support System - Army
HHC	headquarters and headquarters company
ICS3	Integrated Combat Service Support System
ISM	Integrated Sustainment Maintenance
ITV	in-transit visibility
LOGCAP	logistics civilian augmentation program
LOGMARS	Logistics Marking and Reading System
LPT	logistics preparation of the theater
LSE	Logistics Support Element
MIS	management information system
MLMC	Medical Logistics Management Center
MLS	Multiple Level Security
MMC	Materiel Management Center
MOOTW	military operations other than war
MOS	military occupational specialty
MSB	Main Support Battalion

MSE	mobile subscriber equipment
MST	maintenance support team
MTW	major theater war
NDI	nondevelopmental item
ODS/S	Operation Desert Shield/Storm
OPFAC	operational facility
OPTEMPO	operating tempo
POD	port of debarkation
POE	port of embarkation
RC	Reserve Component
RF	radio frequency
RFID	radio frequency identification
SPOD	seaport of debarkation
SPOE	seaport of embarkation
SSA	supply support activity
STAMIS	standard Army management information systems
SWA	Southwest Asia
TAACOM	Theater Army Area Command
TAMCA	Theater Amy Movement Control Agency
TAV	Total Asset Visibility
TCN	Transportation Control Number
TD	total distribution
TMMC	Theater Materiel Management Center
TOE	table of organization and equipment
TPFDL	time phased force deployment list
TPN	Tactical Packet Network
TRADOC	United States Army Training and Doctrine Command
USAMMA	United States Army Medical Materiel Agency
USAR	United States Army Reserve
USTRANSCOM	United States Transportation Command
WEAR	Wartime Executive Agency Requirement
WPS	Worldwide Port System

Section II
Terms

Battlefield distribution (BD)
The holistic system of information exchanges, management procedures, functional designs, and reengineered operational processes which enable U.S. forces to properly request, receive, redirect, track, distribute, control, and retrograde materiel, services, units, and personnel within a single distribution system.

Hub and spoke distribution system
A distribution method utilizing a distribution terminal (hub) which receives shipments from outlying activities and reconfigures/redirects these shipments over designated routes (spokes) to specified supply activities (satellites). The BD hub and spoke system will be modeled on the hub and spoke system in Europe and will benchmark commercial business practices to the extent possible.

Source data automation
Automatic Identification Technologies designed to help the logistician answer "What's in the box and

where is it?" type questions. A combination of source data automation and other AIT will be used in order to achieve the overarching battlefield distribution objectives. Source data is documented at the vendor, depot, or CCP on laser/memory cards, LOGMARS, or similar devices to assist operators and managers along the pipeline with TAV and ITV.

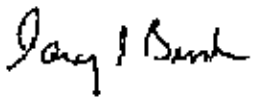
Title 10 and other Wartime Executive Agency Requirements (WEAR)
Title 10, United States Code (USC). Title 10, United States Code (USC) requirements are U.S. law. The functions of the military departments, under the respective Service Secretaries, are subject to the provisions of Title 10 USC and spelled out in DOD Directive 5100.1. The common Title 10 functions include the requirement for the respective military services to:

(a) Prepare forces and establish reserves of manpower, equipment, and supplies.
(b) Maintain readiness in mobile reserve forces.
(c) Provide adequate, timely, and reliable intelligence and counterintelligence.
(d) Recruit, organize, train, and equip interoperable forces for assignment to combatant commands.
(e) Prepare and submit programs and budgets for their respective departments.
(f) Conduct research, develop tactics, techniques, and organization, and develop and procure weapons, equipment, and supplies.
(g) Develop, garrison, supply, equip, and maintain bases and installations.
(h) Provide, as directed, forces for military missions in foreign countries as required.
(i) Assist in training and equipping the military forces of foreign nations.
(j) Provide, as directed, administrative and logistic support to combatant commands.
(k) Assist other services in the accomplishment of their respective missions.
(l) Prepare and submit mobilization information to JCS.

Wartime Executive Agency Requirements (WEAR)
WEAR normally refers to agreements, directives, and procedures, not necessarily prescribed for by law, that identify specific service requirements; for example, the Army's requirement to provide common user land transportation for the respective services during sustained operations.

FOR THE COMMANDER:
OFFICIAL:

JAMES J. CRAVENS, JR.
Major General, GS
Chief of Staff



GARY E. BUSHOVER
Colonel, GS
Deputy Chief of Staff
for Information Management

APÊNDICE 1

EFECTIVOS A PROJECTAR

1 . BATALHÃO LIGEIRO DE DESEMBARQUE (BLD)

ELEMENTO	OFICIAIS	SARGENTOS	PRAÇAS	SUB-TOTAL
ELEMENTO DE COMANDO				
Comando	11	7	24	42
ELEMENTO DE MANOBRA				
Companhia FZ	5	13	106	124
Companhia FZ	5	13	106	124
Companhia FZ	5	13	106	124
ELEMENTO DE APOIO DE COMBATE				
Pelotão de Reconhecimento	1	2	26	29
Pelotão de Anti-carro	1	4	43	48
Pelotão de Morteiros	1	3	32	36
Pelotão Anti-Aéreo	1	1	18	20
Secção de Vigilância do Campo de Batalha		1	11	12
Secção de Sapadores		3	6	9
Secção de Guerra Electrónica		2	12	14
ELEMENTO DE APOIO DE SERVIÇOS				
Formação de Comando do DAP	1	3	5	9
Pelotão de Abastecimento		5	11	16
Pelotão de Manutenção		6	9	15
Pelotão de Transportes	1	2	36	39
Pelotão de Saúde	2	3	9	14
Pelotão PN	1	3	24	28
Secção de NBQ			4	4
ELEMENTO DE ASSALTO ANFÍBIO				
Grupo de Botes	3	6	72	81
Grupo de LARC	1	2	10	13
TOTAL	39	92	670	**801**

2. FORÇA CONJUNTA DE REACÇÃO IMEDIATA (FCRI)

a. Exército

(1) Opção A (Modelo Força Nacional Destacada na Bósnia)

ELEMENTO	OFICIAIS	SARGENTOS	PRAÇAS	SUB-TOTAL
ELEMENTO DE COMANDO				
Comando e Secção de Comando AGR	14	9	6	29
ELEMENTO DE MANOBRA				
Companhia de manobra	5	21	99	125
ELEMENTO DE APOIO DE COMBATE				
Pelotão de Morteiros	1	4	13	18
ELEMENTO DE APOIO DE SERVIÇOS				
Destacamento de Reabastecimento	1	4	14	19
Destacamento de Manutenção	1	6	7	14
Destacamento de Transmissões	1	3	8	12
HCM	8	20	50	78
ELEMENTO DE OPERAÇÕES ESPECIAIS				
Destacamento de Operações Especiais	3	14	31	48
TOTAL	34	81	228	**343**

(2) Opção B

ELEMENTO	OFICIAIS	SARGENTOS	PRAÇAS	SUB-TOTAL
ELEMENTO DE COMANDO				
Comando e Secção de Comando AGR	14	9	6	29
ELEMENTO DE MANOBRA				
Esquadrão de Reconhecimento	5	31	134	170
ELEMENTO DE APOIO DE COMBATE				
Pelotão de Morteiros Pesados (CAC)	1	5	15	21
ELEMENTO DE APOIO DE SERVIÇOS				
Destacamento de Reabastecimento	1	4	14	19
Destacamento de Manutenção	1	6	7	14
Destacamento de Transmissões	1	3	8	12
HCM	8	20	50	78
ELEMENTO DE OPERAÇÕES ESPECIAIS				
Destacamento de Operações Especiais	3	14	31	48
TOTAL	34	92	265	**391**

(3) Opção C

ELEMENTO	OFICIAIS	SARGENTOS	PRAÇAS	SUB-TOTAL
ELEMENTO DE COMANDO				
Comando e Secção de Comando AGR	14	9	6	29
ELEMENTO DE MANOBRA				
Esquadrão de CC	5	21	70	96
ELEMENTO DE APOIO DE COMBATE				
Pelotão de Morteiros Pesados (CAC)	1	5	15	21
ELEMENTO DE APOIO DE SERVIÇOS				
Destacamento de Reabastecimento	1	4	14	19
Destacamento de Manutenção	1	6	7	14
Destacamento de Transmissões	1	3	8	12
HCM	8	20	50	78
ELEMENTO DE OPERAÇÕES ESPECIAIS				
Destacamento de Operações Especiais	3	14	31	48
TOTAL	34	82	201	**317**

3. FORÇA CONJUNTA DE REACÇÃO RÁPIDA (FCRR)

a. Exército (Modelo das FOP)

(1) Opção A

ELEMENTO	OFICIAIS	SARGENTOS	PRAÇAS	SUB-TOTAL
ELEMENTO DE COMANDO				
Comando Brigada	29	30	41	100
Módulo de reforço CIMIC	4		2	6
ELEMENTO DE MANOBRA				
Agrupamento Mecanizado	27	90	300	417
ELEMENTO DE APOIO DE COMBATE				
Esquadrão PE	4	10	86	100
Bateria de Artilharia de Campanha (BMI)	6	20	67	93
Companhia de Engenharia	5	22	107	134
ELEMENTO DE APOIO DE SERVIÇOS				
Agrupamento de Apoio de Serviços	50	110	445	605
Companhia de Transmissões	6	30	151	187
ELEMENTO DE OPERAÇÕES ESPECIAIS				
2 Destacamento de Operações Especiais	6	28	62	96
TOTAL	137	340	1261	**1.738**

(2) Opção B

ELEMENTO	OFICIAIS	SARGENTOS	PRAÇAS	SUB-TOTAL
ELEMENTO DE COMANDO				
Comando Brigada	29	30	41	100
Módulo de reforço CIMIC	4		2	6
ELEMENTO DE MANOBRA				
Batalhão	27	90	325	442
ELEMENTO DE APOIO DE COMBATE				
Esquadrão PE	4	10	86	100
Bateria de Artilharia de Campanha (BAI/BLI)	6	19	65	90
Companhia de Engenharia	5	22	107	134
ELEMENTO DE APOIO DE SERVIÇOS				
Agrupamento de Apoio de Serviços	50	110	445	605
Companhia de Transmissões	6	30	151	187
ELEMENTO DE OPERAÇÕES ESPECIAIS				
2 Destacamento de Operações Especiais	6	28	62	96
TOTAL	137	339	1284	**1.760**

APÊNDICE 2

NECESSIDADES DE ALIMENTAÇÃO (Classe I)

1 . BATALHÃO LIGEIRO DE DESEMBARQUE (BLD)

ELEMENTO	SUB-TOTAL	Quantidade		Peso (Kg)		Volume (m^3)	
		10 dias	30 dias	10 dias	30 dias	10 dias	30 dias
ELEMENTO DE COMANDO							
Comando	42	420	1.260	735	2.205	1,26	3,78
ELEMENTO DE MANOBRA							
Companhia FZ	124	1.240	3.720	2.170	6.510	3,72	11,16
Companhia FZ	124	1.240	3.720	2.170	6.510	3,72	11,16
Companhia FZ	124	1.240	3.720	2.170	6.510	3,72	11,16
ELEMENTO DE APOIO DE COMBATE							
Pelotão de Reconhecimento	29	290	870	508	1.523	0,87	2,61
Pelotão de Anti-carro	48	480	1.440	840	2.520	1,44	4,32
Pelotão de Morteiros	36	360	1.080	630	1.890	1,08	3,24
Pelotão Anti-Aéreo	20	200	600	350	1.050	0,60	1,80
Secção de Vigilância do Campo de Batalha	12	120	360	210	630	0,36	1,08
Secção de Sapadores	9	90	270	158	473	0,27	0,81
Secção de Guerra Electrónica	14	140	420	245	735	0,42	1,26
ELEMENTO DE APOIO DE SERVIÇOS							
Formação de Comando do DAP	9	90	270	158	473	0,27	0,81
Pelotão de Abastecimento	16	160	480	280	840	0,48	1,44
Pelotão de Manutenção	15	150	450	263	788	0,45	1,35
Pelotão de Transportes	39	390	1.170	683	2.048	1,17	3,51
Pelotão de Saúde	14	140	420	245	735	0,42	1,26
Pelotão PN	28	280	840	490	1.470	0,84	2,52
Secção de NBQ	4	40	120	70	210	0,12	0,36
ELEMENTO DE ASSALTO ANFÍBIO							
Grupo de Botes	81	810	2.430	1.418	4.253	2,43	7,29
Grupo de LARC	13	130	390	228	683	0,39	1,17
TOTAL	801	**8.010**	**24.030**	**14.018**	**42.053**	**24**	**72**

2. FORÇA CONJUNTA DE REACÇÃO IMEDIATA (FCRI)

a. Exército

(1) Opção A (Modelo Força Nacional Destacada na Bósnia)

ELEMENTO	SUB-TOTAL	Quantidade		Peso (Kg)		Volume (m^3)	
		10 dias	30 dias	10 dias	30 dias	10 dias	30 dias
ELEMENTO DE COMANDO							
Comando e Secção de Comando AGR	29	290	870	508	1.523	0,87	2,61
ELEMENTO DE MANOBRA							
Companhia de manobra	125	1.250	3.750	2.188	6.563	3,75	11,25
ELEMENTO DE APOIO DE COMBATE							
Pelotão de Morteiros	18	180	540	315	945	0,54	1,62
ELEMENTO DE APOIO DE SERVIÇOS							
Destacamento de Rebastecimento	19	190	570	333	998	0,57	1,71
Destacamento de Manutenção	14	140	420	245	735	0,42	1,26
Destacamento de Transmissões	12	120	360	210	630	0,36	1,08
HCM	78	780	2.340	1.365	4.095	2,34	7,02
ELEMENTO DE OPERAÇÕES ESPECIAIS							
Destacamento de Operações Especiais	48	480	1.440	840	2.520	1,44	4,32
TOTAL	343	**3.430**	**10.290**	**6.003**	**18.008**	**10**	**31**

(2) Opção B

ELEMENTO	SUB-TOTAL	Quantidade		Peso (Kg)		Volume (m^3)	
		10 dias	30 dias	10 dias	30 dias	10 dias	30 dias
ELEMENTO DE COMANDO							
Comando e Secção de Comando AGR	29	290	870	508	1.523	0,87	2,61
ELEMENTO DE MANOBRA							
Esquadrão de Reconhecimento	170	1.700	5.100	2.975	8.925	5,1	15,3
ELEMENTO DE APOIO DE COMBATE							
Pelotão de Morteiros Pesados (CAC)	21	210	630	368	1.103	0,63	1,89
ELEMENTO DE APOIO DE SERVIÇOS							
Destacamento de Rebastecimento	19	190	570	333	998	0,57	1,71
Destacamento de Manutenção	14	140	420	245	735	0,42	1,26
Destacamento de Transmissões	12	120	360	210	630	0,36	1,08
HCM	78	780	2.340	1.365	4.095	2,34	7,02
ELEMENTO DE OPERAÇÕES ESPECIAIS							
Destacamento de Operações Especiais	48	480	1.440	840	2.520	1,44	4,32
TOTAL	391	**3.910**	**11.730**	**6.843**	**20.528**	**12**	**35**

(3) Opção C

ELEMENTO	SUB-TOTAL	Quantidade		Peso (Kg)		Volume (m^3)	
		10 dias	30 dias	10 dias	30 dias	10 dias	30 dias
ELEMENTO DE COMANDO							
Comando e Secção de Comando AGR	29	290	870	508	1.523	0,87	2,61
ELEMENTO DE MANOBRA	0						
Esquadrão de CC	96	960	2.880	1.680	5.040	2,88	8,64
ELEMENTO DE APOIO DE COMBATE							
Pelotão de Morteiros Pesados (CAC)	21	210	630	368	1.103	0,63	1,89
ELEMENTO DE APOIO DE SERVIÇOS							
Destacamento de Rebastecimento	19	190	570	333	998	0,57	1,71
Destacamento de Manutenção	14	140	420	245	735	0,42	1,26
Destacamento de Transmissões	12	120	360	210	630	0,36	1,08
HCM	78	780	2.340	1.365	4.095	2,34	7,02
ELEMENTO DE OPERAÇÕES ESPECIAIS							
Destacamento de Operações Especiais	48	480	1.440	840	2.520	1,44	4,32
TOTAL	317	**3.170**	**9.510**	**5.548**	**16.643**	**10**	**29**

3. FORÇA CONJUNTA DE REACÇÃO RÁPIDA (FCRR)

a. Exército (Modelo das FOP)

(1) Opção A

ELEMENTO	SUB-TOTAL	Quantidade		Peso (Kg)		Volume (m^3)	
		10 dias	30 dias	10 dias	30 dias	10 dias	30 dias
ELEMENTO DE COMANDO							
Comando Brigada	100	1.000	3.000	1.750	5.250	3	9
Módulo de reforço CIMIC	6	60	180	105	315	0,18	0,54
ELEMENTO DE MANOBRA							
Agrupamento Mecanizado	417	4.170	12.510	7.298	21.893	12,51	37,53
ELEMENTO DE APOIO DE COMBATE							
Esquadrão PE	100	1.000	3.000	1.750	5.250	3	9
Bateria de Artilharia de Campanha (BMI)	93	930	2.790	1.628	4.883	2,79	8,37
Companhia de Engenharia	134	1.340	4.020	2.345	7.035	4,02	12,06
ELEMENTO DE APOIO DE SERVIÇOS							
Agrupamento de Apoio de Serviços	605	6.050	18.150	10.588	31.763	18,15	54,45
Companhia de Transmissões	187	1.870	5.610	3.273	9.818	5,61	16,83
ELEMENTO DE OPERAÇÕES ESPECIAIS							
2 Destacamento de Operações Especiais	96	960	2.880	1.680	5.040	2,88	8,64
TOTAL	1.738	**17.380**	**52.140**	**30.415**	**91.245**	**52**	**156**

(2) Opção B

ELEMENTO	SUB-TOTAL	Quantidade		Peso (Kg)		Volume (m^3)	
		10 dias	30 dias	10 dias	30 dias	10 dias	30 dias
ELEMENTO DE COMANDO							
Comando Brigada	100	1.000	3.000	1.750	5.250	3	9
Módulo de reforço CIMIC	6	60	180	105	315	0,18	0,54
ELEMENTO DE MANOBRA							
Batalhão	442	4.420	13.260	7.735	23.205	13,26	39,78
ELEMENTO DE APOIO DE COMBATE							
Esquadrão PE	100	1.000	3.000	1.750	5.250	3	9
Bateria de Artilharia de Campanha (BAI/BLI)	90	900	2.700	1.575	4.725	2,7	8,1
Companhia de Engenharia	134	1.340	4.020	2.345	7.035	4,02	12,06
ELEMENTO DE APOIO DE SERVIÇOS							
Agrupamento de Apoio de Serviços	605	6.050	18.150	10.588	31.763	18,15	54,45
Companhia de Transmissões	187	1.870	5.610	3.273	9.818	5,61	16,83
ELEMENTO DE OPERAÇÕES ESPECIAIS							
2 Destacamento de Operações Especiais	96	960	2.880	1.680	5.040	2,88	8,64
TOTAL	1.760	**17.600**	**52.800**	**30.800**	**92.400**	**53**	**158**

APÊNDICE 3

VIATURAS E ATRELADOS A PROJECTAR (Classe II)

1. BATALHÃO LIGEIRO DE DESEMBARQUE (BLD)

a. Opção A

TIPO	Qt	DIMENSÕES (m)			ÁREA (m^2)	PESO (Ton)	ÁREA TOTAL	PESO TOTAL
		c	l	a				
Ligeira	**43**	4,30	1,60	1,90	6,88	2,70	295,84	116,10
Médias	**24**	5,60	2,30	2,60	12,88	4,00	309,12	96,00
Ambulâncias	**3**	4,50	1,70	2,20	7,65	3,60	22,95	10,80
Posto de Comando	**6**	7,80	2,40	2,60	18,72	8,00	112,32	48,00
Especiais	**4**	7,90	2,40	3,10	18,96	7,00	75,84	28,00
Dep. água/comb. 2.500 l	**4**	5,10	2,30	2,45	11,73	2,50	46,92	10,00
Dep. água 1.000 l	**4**	4,45	2,00	2,00	8,90	2,50	35,60	10,00
Total	**88**						**899**	**319**

b. Opção B

TIPO	Qt	DIMENSÕES (m)			ÁREA (m^2)	PESO (Ton)	ÁREA TOTAL	PESO TOTAL
		c	l	a				
Ligeira	**38**	4,30	1,60	1,90	6,88	1,70	261,44	64,60
VBTP (C)	**1**	6,44	2,50	2,79	16,10	12,30	16,10	12,30
VBTP (P)	**13**	6,39	2,50	2,69	15,98	12,90	207,68	167,70
VBTP (R)	**1**	6,39	2,50	2,69	15,98	12,90	15,98	12,90
Médias	**12**	5,60	2,30	2,60	12,88	5,30	154,56	63,60
Ambulâncias	**3**	4,50	1,70	2,20	7,65	2,70	22,95	8,10
Posto de Comando	**6**	7,80	2,40	2,60	18,72	8,00	112,32	48,00
Especiais	**4**	7,90	2,40	3,10	18,96	7,00	75,84	28,00
Dep. água/comb. 2.500 l	**4**	5,10	2,30	2,45	11,73	2,50	46,92	10,00
Dep. água 1.000 l	**4**	4,45	2,00	2,00	8,90	2,50	35,60	10,00
Total	**86**						**949**	**425**

2. FORÇA CONJUNTA DE REAÇÇÃO IMEDIATA (FCRI)

b. Exército

(1) Opção A (Modelo Força Nacional Destacada na Bósnia)

TIPO	Qt	DIMENSÕES (m)			ÁREA (m^2)	PESO (Ton)	ÁREA TOTAL	PESO TOTAL
		c	l	a				
Atl Água 1.500	**5**	4,23	2,36	2,03	9,98	1,03	49,91	5,17
Atl Gerador 10 Kwa	**7**	1,90	0,80	1,18	1,52	0,76	10,64	5,32
Atl Gerador 45 Kwa	**4**	2,78	1,00	1,38	2,78	1,27	11,12	5,08
Atl Gerador 60 Kwa	**5**	2,78	1,00	1,47	2,78	1,30	13,90	6,50
Atl Lig	**16**	1,81	1,56	1,40	2,82	0,31	45,18	4,96
Atl Médio	**16**	3,05	2,18	5,50	6,65	0,96	106,38	15,36
Atl Pes	**0**	5,40	1,85	1,70	9,99	2,30	0,00	0,00
Auto Água 5.000 l	**1**	6,17	2,47	2,86	15,24	12,00	15,24	12,00
Auto Comb 4.500 l	**1**	6,68	2,44	2,50	16,29	11,00	16,29	11,00
Auto PS (M816)	**2**	9,00	2,50	2,70	22,50	22,00	45,00	44,00
Empilhador TT (med)	**2**	4,46	3,36	1,98	14,99	4,60	29,97	9,20
Esp. Cabine TMs	**4**	5,87	2,30	4,00	13,50	5,25	54,00	21,00
Esp. Reab c/Atl (90.17)	**5**				0,00		0,00	0,00
Especial (Oficina Elect.)	**1**				0,00		0,00	0,00
Especial (Oficina Mecânica)	**2**				0,00		0,00	0,00
Semi-Atl (Banhos)	**2**				0,00		0,00	0,00
Semi-Atl (Cozinha)	**8**				0,00		0,00	0,00
Semi-Atl (Latrina)	**2**				0,00		0,00	0,00
Semi-Atl (Lavandaria)	**4**				0,00		0,00	0,00
VBL Rodas (Chaimite)	**14**	5,60	2,26	2,39	12,66	7,62	177,18	106,71
VTL	**20**	3,80	1,79	1,97	6,80	2,40	136,04	48,00
VTM (Guincho)	**24**	5,87	2,30	2,83	13,50	5,25	324,02	126,00
VTPes	**5**	6,87	2,50	3,40	17,18	7,80	85,88	39,00
VTPes-PC	**7**				0,00	7,80	0,00	54,60
Auto-Maca Média	**12**	5,24	2,01	2,73	10,52	4,30	126,26	51,60
Auto Tanque 10.000	**1**				0,00		0,00	0,00
Tractor 6 Ton	**6**	6,50	2,50	2,70	16,25	14,33	97,50	85,96
Semi-Atl 20 Ton (Granel)	**6**				0,00	20,00	0,00	120,00
Contentor 20'	**6**				0,00		0,00	0,00
VB Lagartas Sanitária	**0**	4,86	2,69	2,50	13,06	11,16	0,00	0,00
VB Lagartas P	**0**	4,86	2,69	2,50	13,05	11,16	0,00	0,00
VB Lagartas PC	**0**	4,86	2,54	2,68	12,35	11,51	0,00	0,00
VB Lagartas Porta Mort	**0**	4,30	2,69	2,50	11,54	12,00	0,00	0,00
CC Médio	**0**	9,44	6,95	3,28	65,54	51,39	0,00	0,00
VB Lagartas Média Rec	**0**	8,27	3,43	3,15	28,37	50,80	0,00	0,00
VB Lagartas Lig. Rec	**0**	6,43	3,50	3,43	22,51	27,22	0,00	0,00
Total	**188**						**1.345**	**771**

(2) Opção B

TIPO	Qt	DIMENSÕES (m)			ÁREA (m^2)	PESO (Ton)	ÁREA TOTAL	PESO TOTAL
		c	l	a				
Atl Água 1.500	**6**	4,23	2,36	2,03	9,98	1,03	59,90	6,20
Atl Gerador 10 Kwa	**7**	1,90	0,80	1,18	1,52	0,76	10,64	5,32
Atl Gerador 45 Kwa	**4**	2,78	1,00	1,38	2,78	1,27	11,12	5,08
Atl Gerador 60 Kwa	**5**	2,78	1,00	1,47	2,78	1,30	13,90	6,50
Atl Lig	**14**	1,81	1,56	1,40	2,82	0,31	39,53	4,34
Atl Médio	**17**	3,05	2,18	5,50	6,65	0,96	113,03	16,32
Atl Pes	**0**	5,40	1,85	1,70	9,99	2,30	0,00	0,00
Auto Água 5.000 l	**1**	6,17	2,47	2,86	15,24	12,00	15,24	12,00
Auto Comb 4.500 l	**2**	6,68	2,44	2,50	16,29	11,00	32,59	22,00
Auto PS (M816)	**2**	9,00	2,50	2,70	22,50	22,00	45,00	44,00
Empilhador TT (med)	**2**	4,46	3,36	1,98	14,99	4,60	29,97	9,20
Esp. Cabine TMs	**4**	5,87	2,30	4,00	13,50	5,25	54,00	21,00
Esp. Reab c/Atl (90.17)	**5**				0,00		0,00	0,00
Especial (Oficina Elect.)	**1**				0,00		0,00	0,00
Especial (Oficina Mecânica)	**2**				0,00		0,00	0,00
Semi-Atl (Banhos)	**2**				0,00		0,00	0,00
Semi-Atl (Cozinha)	**9**				0,00		0,00	0,00
Semi-Atl (Latrina)	**2**				0,00		0,00	0,00
Semi-Atl (Lavandaria)	**4**				0,00		0,00	0,00
VBL Rodas (Chaimite)	**0**	5,60	2,26	2,39	12,66	7,62	0,00	0,00
VTL	**22**	3,80	1,79	1,97	6,80	2,40	149,64	52,80
VTM (Guincho)	**25**	5,87	2,30	2,83	13,50	5,25	337,53	131,25
VTPes	**5**	6,87	2,50	3,40	17,18	7,80	85,88	39,00
VTPes-PC	**7**				0,00	7,80	0,00	54,60
Auto-Maca Média	**13**	5,24	2,01	2,73	10,52	4,30	136,78	55,90
Auto Tanque 10.000	**1**				0,00		0,00	0,00
Tractor 6 Ton	**6**	6,50	2,50	2,70	16,25	14,33	97,50	85,96
Semi-Atl 20 Ton (Granel)	**6**				0,00	20,00	0,00	120,00
Contentor 20'	**6**				0,00		0,00	0,00
VB Lagartas Sanitária	**1**	4,86	2,69	2,50	13,06	11,16	13,06	11,16
VB Lagartas P	**16**	4,86	2,69	2,50	13,05	11,16	208,86	178,50
VB Lagartas PC	**3**	4,86	2,54	2,68	12,35	11,51	37,06	34,54
VB Lagartas Porta Mort	**4**	4,30	2,69	2,50	11,54	12,00	46,16	47,98
CC Médio	**9**	9,44	6,95	3,28	65,54	51,39	589,88	462,53
VB Lagartas Média Rec	**1**	8,27	3,43	3,15	28,37	50,80	28,37	50,80
VB Lagartas Lig. Rec	**1**	6,43	3,50	3,43	22,51	27,22	22,51	27,22
Total	**215**						**2.178**	**1.504**

(3) Opção C

TIPO	Qt	DIMENSÕES (m)			ÁREA (m^2)	PESO (Ton)	ÁREA TOTAL	PESO TOTAL
		c	l	a				
Atl Água 1.500	**5**	4,23	2,36	2,03	9,98	1,03	49,91	5,17
Atl Gerador 10 Kwa	**7**	1,90	0,80	1,18	1,52	0,76	10,64	5,32
Atl Gerador 45 Kwa	**2**	2,78	1,00	1,38	2,78	1,27	5,56	2,54
Atl Gerador 60 Kwa	**5**	2,78	1,00	1,47	2,78	1,30	13,90	6,50
Atl Lig	**10**	1,81	1,56	1,40	2,82	0,31	28,24	3,10
Atl Médio	**12**	3,05	2,18	5,50	6,65	0,96	79,79	11,52
Atl Pes	**0**	5,40	1,85	1,70	9,99	2,30	0,00	0,00
Auto Água 5.000 l	**1**	6,17	2,47	2,86	15,24	12,00	15,24	12,00
Auto Comb 4.500 l	**1**	6,68	2,44	2,50	16,29	11,00	16,29	11,00
Auto PS (M816)	**2**	9,00	2,50	2,70	22,50	22,00	45,00	44,00
Empilhador TT (med)	**2**	4,46	3,36	1,98	14,99	4,60	29,97	9,20
Esp. Cabine TMs	**4**	5,87	2,30	4,00	13,50	5,25	54,00	21,00
Esp. Reab c/Atl (90.17)	**1**				0,00		0,00	0,00
Especial (Oficina Elect.)	**1**				0,00		0,00	0,00
Especial (Oficina Mecânica)	**1**				0,00		0,00	0,00
Semi-Atl (Banhos)	**2**				0,00		0,00	0,00
Semi-Atl (Cozinha)	**2**				0,00		0,00	0,00
Semi-Atl (Latrina)	**2**				0,00		0,00	0,00
Semi-Atl (Lavandaria)	**1**				0,00		0,00	0,00
VBL Rodas (Chaimite)	**0**	5,60	2,26	2,39	12,66	7,62	0,00	0,00
VTL	**13**	3,80	1,79	1,97	6,80	2,40	88,43	31,20
VTM (Guincho)	**9**	5,87	2,30	2,83	13,50	5,25	121,51	47,25
VTPes	**5**	6,87	2,50	3,40	17,18	7,80	85,88	39,00
VTPes-PC	**7**				0,00	7,80	0,00	54,60
Auto-Maca Média	**12**	5,24	2,01	2,73	10,52	4,30	126,26	51,60
Auto Tanque 10.000	**1**				0,00		0,00	0,00
Tractor 6 Ton	**6**	6,50	2,50	2,70	16,25	14,33	97,50	85,96
Semi-Atl 20 Ton (Granel)	**6**				0,00	20,00	0,00	120,00
Contentor 20'	**6**				0,00		0,00	0,00
VB Lagartas Sanitária	**0**	4,86	2,69	2,50	13,06	11,16	0,00	0,00
VB Lagartas P	**2**	4,86	2,69	2,50	13,05	11,16	26,11	22,31
VB Lagartas PC	**0**	4,86	2,54	2,68	12,35	11,51	0,00	0,00
VB Lagartas Porta Mort	**0**	4,30	2,69	2,50	11,54	12,00	0,00	0,00
CC Médio	**17**	9,44	6,95	3,28	65,54	51,39	1114,22	873,66
VB Lagartas Média Rec	**1**	8,27	3,43	3,15	28,37	50,80	28,37	50,80
VB Lagartas Lig. Rec	**0**	6,43	3,50	3,43	22,51	27,22	0,00	0,00
Total	**146**						**2.037**	**1.508**

3. FORÇA CONJUNTA DE REAÇÇÃO RÁPIDA (FCRR)

c. Exército (Modelo das FOP)

(1) Opção A

TIPO	Qt	DIMENSÕES (m)			ÁREA (m^2)	PESO (Ton)	ÁREA TOTAL	PESO TOTAL
		c	l	a				
Atl Água 1.500	**9**	4,23	2,36	2,03	9,98	1,03	89,85	9,31
Atl Gerador 10 Kwa	**1**	1,90	0,80	1,18	1,52	0,76	1,52	0,76
Atl Gerador 45 Kwa	**3**	2,78	1,00	1,38	2,78	1,27	8,34	3,81
Atl Gerador 60 Kwa	**0**	2,78	1,00	1,47	2,78	1,30	0,00	0,00
Atl Lig	**40**	1,81	1,56	1,40	2,82	0,31	112,94	12,40
Atl Médio	**88**	3,05	2,18	5,50	6,65	0,96	585,11	84,48
Atl Pes	**0**	5,40	1,85	1,70	9,99	2,30	0,00	0,00
Auto Água 5.000 l	**0**	6,17	2,47	2,86	15,24	12,00	0,00	0,00
Auto Comb 4.500 l	**3**	6,68	2,44	2,50	16,29	11,00	48,88	33,00
Auto PS (M816)	**3**	9,00	2,50	2,70	22,50	22,00	67,50	66,00
Empilhador TT	**4**	4,46	3,36	1,98	14,99	4,60	59,94	18,40
Esp. Cabine TMs	**0**	5,87	2,30	4,00	13,50	5,25	0,00	0,00
Esp. Reab c/Atl (90.17)	**0**				0,00		0,00	0,00
Especial (Oficina Elect.)	**2**				0,00		0,00	0,00
Especial (Oficina Mecânica)	**2**				0,00		0,00	0,00
Semi-Atl (Banhos)	**0**				0,00		0,00	0,00
Semi-Atl (Cozinha)	**5**				0,00		0,00	0,00
Semi-Atl (Latrina)	**0**				0,00		0,00	0,00
Semi-Atl (Lavandaria)	**0**				0,00		0,00	0,00
VBL Rodas (Chaimite)	**0**	5,60	2,26	2,39	12,66	7,62	0,00	0,00
VTL	**61**	3,80	1,79	1,97	6,80	2,40	414,92	146,40
VTM (Guincho)	**105**	5,87	2,30	2,83	13,50	5,25	1417,61	551,25
VTPes	**0**	6,87	2,50	3,40	17,18	7,80	0,00	0,00
VTPes-PC	**0**				0,00	7,80	0,00	0,00
Auto-Maca Média	**0**	5,24	2,01	2,73	10,52	4,30	0,00	0,00
Auto Tanque 10.000	**0**				0,00		0,00	0,00
Tractor 6 Ton	**28**	6,50	2,50	2,70	16,25	14,33	455,00	401,16
Semi-Atl 20 Ton (Granel)	**11**				0,00	20,00	0,00	220,00
Contentor 20'	**0**				0,00		0,00	0,00
VB Lagartas Sanitária	**0**	4,86	2,69	2,50	13,06	11,16	0,00	0,00
VB Lagartas P	**16**	4,86	2,69	2,50	13,05	11,16	208,86	178,50
VB Lagartas PC	**4**	4,86	2,54	2,68	12,35	11,51	49,41	46,05
VB Lagartas Porta Mort	**0**	4,30	2,69	2,50	11,54	12,00	0,00	0,00
CC Médio	**0**	9,44	6,95	3,28	65,54	51,39	0,00	0,00
VB Lagartas Média Rec	**1**	8,27	3,43	3,15	28,37	50,80	28,37	50,80
VB Lagartas Lig. Rec	**1**	6,43	3,50	3,43	22,51	27,22	22,51	27,22
Total	**387**						**3.571**	**1.850**

(2) Opção B

TIPO	Qt	DIMENSÕES (m)			ÁREA (m^2)	PESO (Ton)	ÁREA TOTAL	PESO TOTAL
		c	l	a				
Atl Água 1.500	**28**	4,23	2,36	2,03	9,98	1,03	279,52	28,95
Atl Gerador 10 Kwa	**1**	1,90	0,80	1,18	1,52	0,76	1,52	0,76
Atl Gerador 45 Kwa	**2**	2,78	1,00	1,38	2,78	1,27	5,56	2,54
Atl Gerador 60 Kwa	**0**	2,78	1,00	1,47	2,78	1,30	0,00	0,00
Atl Lig	**128**	1,81	1,56	1,40	2,82	0,31	361,42	39,68
Atl Médio	**165**	3,05	2,18	5,50	6,65	0,96	1097,09	158,40
Atl Pes	**0**	5,40	1,85	1,70	9,99	2,30	0,00	0,00
Auto Água 5.000 l	**2**	6,17	2,47	2,86	15,24	12,00	30,48	24,00
Auto Comb 4.500 l	**7**	6,68	2,44	2,50	16,29	11,00	114,05	77,00
Auto PS (M816)	**0**	9,00	2,50	2,70	22,50	22,00	0,00	0,00
Empilhador TT	**5**	4,46	3,36	1,98	14,99	4,60	74,93	23,00
Esp. Cabine TMs	**0**	5,87	2,30	4,00	13,50	5,25	0,00	0,00
Esp. Reab c/Atl (90.17)	**0**				0,00		0,00	0,00
Especial (Oficina Elect.)	**0**				0,00		0,00	0,00
Especial (Oficina Mecânica)	**0**				0,00		0,00	0,00
Semi-Atl (Banhos)	**0**				0,00		0,00	0,00
Semi-Atl (Cozinha)	**14**				0,00		0,00	0,00
Semi-Atl (Latrina)	**0**				0,00		0,00	0,00
Semi-Atl (Lavandaria)	**0**				0,00		0,00	0,00
VBL Rodas (Chaimite)	**0**	5,60	2,26	2,39	12,66	7,62	0,00	0,00
VTL	**154**	3,80	1,79	1,97	6,80	2,40	1047,51	369,60
VTM	**236**	5,87	2,30	2,83	13,50	5,25	3186,24	1239,00
VTPes	**16**	6,87	2,50	3,40	17,18	7,80	274,80	124,80
VTPes-PC	**6**				0,00	7,80	0,00	46,80
Auto-Maca Média	**19**	5,24	2,01	2,73	10,52	4,30	199,92	81,70
Auto Tanque 10.000	**0**				0,00		0,00	0,00
Tractor 6 Ton	**18**	6,50	2,50	2,70	16,25	14,33	292,50	257,89
Semi-Atl 20 Ton (Granel)	**3**				0,00	20,00	0,00	60,00
Contentor 20'	**0**				0,00		0,00	0,00
VB Lagartas Sanitária	**0**	4,86	2,69	2,50	13,06	11,16	0,00	0,00
VB Lagartas P	**0**	4,86	2,69	2,50	13,05	11,16	0,00	0,00
VB Lagartas PC	**0**	4,86	2,54	2,68	12,35	11,51	0,00	0,00
VB Lagartas Porta Mort	**0**	4,30	2,69	2,50	11,54	12,00	0,00	0,00
CC Médio	**0**	9,44	6,95	3,28	65,54	51,39	0,00	0,00
VB Lagartas Média Rec	**0**	8,27	3,43	3,15	28,37	50,80	0,00	0,00
VB Lagartas Lig. Rec	**0**	6,43	3,50	3,43	22,51	27,22	0,00	0,00
Total	**804**						**6.966**	**2.534**

APÊNDICE 4

NECESSIDADES DE COMBUSTÍVEL (Classe III)

1. BATALHÃO LIGEIRO DE DESEMBARQUE (BLD)

a. Opção A

TIPO	Qt	UC (litros)	EL. COM	ELEMENTO APOIO COMBATE					ELEMENTO APOIO SERVIÇOS					TOTAL
				Pel ACAR	Pel Mort	PEL A/A	SEC VCB	SEC GE	FC	Pel Man	Pel TT	Pel SS	Pel PN	
Ligeira	43	**12**		13	1	3	2	4		3	11		6	
Médias	24	**18**			6						18			
Ambulâncias	3	**12**										3		
Posto de Comando	6	**12**	5						1					
Especiais	4	**28**								1	3			
Dep. água/comb. 2.500 l	4										4			
Dep. água 1.000 l	4										4			
	88		60	156	120	36	24	48	12	64	540	36	72	
TOTAL			**292,5**	**760,5**	**585**	**176**	**117**	**234**	**58,5**	**312**	**2632,5**	**176**	**351**	**5.694**

b. Opção B

TIPO	Qt	UC (litros)	EL. COM	ELEMENTO APOIO COMBATE					ELEMENTO APOIO SERVIÇOS					TOTAL
				Pel ACAR	Pel Mort	PEL A/A	SEC VCB	SEC GE	FC	Pel Man	Pel TT	Pel SS	Pel PN	
Ligeira	38	**12**		13	1	3	2	4		3	6		6	
VBTP (C)	1	**48**									1			
VBTP (P)	13	**48**									13			
VBTP (R)	1	**48**									1			
Médias	12	**18**			6						6			
Ambulâncias	3	**12**										3		
Posto de Comando	6	**12**	5						1					
Especiais	4	**28**								1	3			
Dep. água/comb. 2.500 l	4										4			
Dep. água 1.000 l	4										4			
	86		60	156	120	36	24	48	12	64	984	36	72	
TOTAL			**292,5**	**760,5**	**585**	**176**	**117**	**234**	**58,5**	**312**	**4797**	**176**	**351**	**7.508**

2. FORÇA CONJUNTA DE REACÇÃO IMEDIATA (FCRI)

a. Exército

(1) Opção A (Modelo Força Nacional Destacada na Bósnia)

TIPO	Qt	UC (litros)	EL. COM.	EL. MANOB	EL. AP. COMB.	ELEMENTO APOIO SERVIÇOS				TOTAL
			CMD BAT/AGR	Comp	Pel Mort	Dest TMs	Dest Reab	Dest Man	HCM	
Atl Água 1.500	5						1		4	
Atl Gerador 10 Kwa	7	**10**					4		3	
Atl Gerador 45 Kwa	4	**15**					2		2	
Atl Gerador 60 Kwa	5	**20**					5			
Atl Lig	16		3	4	1		6		2	
Atl Médio	16			2		4	6		4	
Atl Pes	0									
Auto Água 5.000 l	1	**34**					1			
Auto Comb 4.500 l	1	**34**					1			
Auto PS (M816)	2	**34**						2		
Empilhador TT (med)	2	**50**					2			
Esp. Cabine TMs	4	**18**				4				
Esp. Reab c/Atl (90.17)	5	**50**					1		4	
Especial (Of. Elect.)	1	**25**						1		
Especial (Of. Mec.)	2	**25**						1	1	
Semi-Atl (Banhos)	2						2			
Semi-Atl (Cozinha)	8						2		6	
Semi-Atl (Latrina)	2						2			
Semi-Atl (Lavandaria)	4						1		3	
VBL Rodas (Chaimite)	14	**48**		10	4					
VTL	20	**12**	4	4	1		6		5	
VTM (Guincho)	24	**18**		2			6		16	
VTPes	5	**28**	1				4			
VTPes-PC	7	**28**	1				6			
Auto-Maca Média	12								12	
Auto Tanque 10.000	1								1	
Tractor 6 Ton	6								6	
Semi-Atl 20 Ton (Granel)	6								6	
Contentor 20'	6								6	
VB Lagartas Sanitária	0									
VB Lagartas P	0									
VB Lagartas PC	0									
VB Lagartas Porta Mort	0									
CC Médio	0									
VB Lagartas Média Rec	0									
VB Lagartas Lig. Rec	0									
	188		104	564	204	72	848	118	633	
TOTAL			**507**	**2749,5**	**994,5**	**351**	**4134**	**575**	**3085,875**	**12.397**

(2) Opção B

TIPO	Qt	UC (litros)	EL. COM	EL. MANOB	EL. AP. COMB	ELEMENTO APOIO SERVIÇOS				TOTAL
			CMD BAT/AGR	Esq Rec	Pel Mort Pes (CAC)	Dest TMs	Dest Reab	Dest Man	HCM	
Atl Água 1.500	6			1			1		4	
Atl Gerador 10 Kwa	7	**10**					4		3	
Atl Gerador 45 Kwa	4	**15**					2		2	
Atl Gerador 60 Kwa	5	**20**					5			
Atl Lig	14		3	3			6		2	
Atl Médio	17			3		4	6		4	
Atl Pes	0									
Auto Água 5.000 l	1	**45**					1			
Auto Comb 4.500 l	2	**45**		1			1			
Auto PS (M816)	2	**34**						2		
Empilhador TT (med)	2	**50**					2			
Esp. Cabine TMs	4	**18**				4				
Esp. Reab c/Atl (90.17)	5	**50**					1		4	
Especial (Of. Elect.)	1	**25**						1		
Especial (Of. Mec.)	2	**25**						1	1	
Semi-Atl (Banhos)	2						2			
Semi-Atl (Cozinha)	9			1			2		6	
Semi-Atl (Latrina)	2						2			
Semi-Atl (Lavandaria)	4						1		3	
VBL Rodas (Chaimite)	0	**48**								
VTL	22	**12**	4	7			6		5	
VTM (Guincho)	25	**18**		3			6		16	
VTPes	5	**28**	1				4			
VTPes-PC	7	**28**	1				6			
Auto-Maca Média	13	**18**		1					12	
Auto Tanque 10.000	1								1	
Tractor 6 Ton	6	**50**							6	
Semi-Atl 20 Ton (Granel)	6								6	
Contentor 20'	6								6	
VB Lagartas Sanitária	1	**104**		1						
VB Lagartas P	16	**76**		16						
VB Lagartas PC	3	**104**		3						
VB Lagartas Porta Mort	4	**76**		4						
CC Médio	9	**310**		9						
VB Lagartas Média Rec	1	**330**		1						
VB Lagartas Lig. Rec	1	**76**		1						
	215		104	5333	0	72	870	118	1149	
TOTAL			**507**	**25998,375**	**0**	**351**	**4241,25**	**575**	**5601,375**	**37.274**

(3) Opção C

TIPO	Qt	UC (litros)	EL. COM	EL. MANOB	EL. AP. COMB	ELEMENTO APOIO SERVIÇOS				TOTAL
			CMD BAT/AGR	Esq CC	Pel Mort Pes (CAC)	Dest TMs	Dest Reab	Dest Man	HCM	
Atl Água 1.500	5						1		4	
Atl Gerador 10 Kwa	7	**10**					4		3	
Atl Gerador 45 Kwa	2	**15**					2			
Atl Gerador 60 Kwa	5	**20**					5			
Atl Lig	10		3	1			6			
Atl Médio	12			2		4	6			
Atl Pes	0									
Auto Água 5.000 l	1	**45**					1			
Auto Comb 4.500 l	1	**45**					1			
Auto PS (M816)	2	**34**						2		
Empilhador TT (med)	2	**50**					2			
Esp. Cabine TMs	4	**18**				4				
Esp. Reab c/Atl (90.17)	1	**50**					1			
Especial (Of. Elect.)	1	**25**						1		
Especial (Of. Mec.)	1	**25**						1		
Semi-Atl (Banhos)	2						2			
Semi-Atl (Cozinha)	2						2			
Semi-Atl (Latrina)	2						2			
Semi-Atl (Lavandaria)	1						1			
VBL Rodas (Chaimite)	0	**48**								
VTL	13	**12**	4	3			6			
VTM (Guincho)	9	**18**		3			6			
VTPes	5	**28**	1				4			
VTPes-PC	7	**28**	1				6			
Auto-Maca Média	12	**18**							12	
Auto Tanque 10.000	1								1	
Tractor 6 Ton	6	**50**							6	
Semi-Atl 20 Ton (Granel)	6								6	
Contentor 20'	6								6	
VB Lagartas Sanitária	0	**104**								
VB Lagartas P	2	**76**		2						
VB Lagartas PC	0	**104**								
VB Lagartas Porta Mort	0	**76**								
CC Médio	17	**310**		17						
VB Lagartas Média Rec	1	**330**		1						
VB Lagartas Lig. Rec	0	**76**								
	146		104	5842	0	72	870	118	546	
TOTAL			**507**	**28479,75**	**0**	**351**	**4241,25**	**575**	**2661,75**	**36.816**

3. FORÇA CONJUNTA DE REACÇÃO RÁPIDA (FCRR)

a. Exército (Modelo das FOP)

(1) Opção A

TIPO	Qt	UC (litros)	EL. COMANDO		EL. MANOB	EL. APOIO COMBATE			EL. AP. SERVIÇOS		TOTAL
			CMD BRIG	MÓD. Ref. CIMIC	AGR MEC	Esq PE	Btr AC (BMI)	Comp Eng	AGR Ap Svc	Comp TMs	
Atl Água 1.500	9							1	7	1	
Atl Gerador 10 Kwa	1	**10**							1		
Atl Gerador 45 Kwa	3	**15**							3		
Atl Gerador 60 Kwa	0	**20**									
Atl Lig	40		4					3	28	5	
Atl Médio	88		1					18	52	17	
Atl Pes	0										
Auto Água 5.000 l	0	**45**									
Auto Comb 4.500 l	3	**45**							3		
Auto PS (M816)	3	**34**							3		
Empilhador TT (med)	4	**50**						1	3		
Esp. Cabine TMs	0	**18**									
Esp. Reab c/Atl (90.17)	0	**50**									
Especial (Of. Elect.)	2	**25**							2		
Especial (Of. Mec.)	2	**25**							2		
Semi-Atl (Banhos)	0										
Semi-Atl (Cozinha)	5								4	1	
Semi-Atl (Latrina)	0										
Semi-Atl (Lavandaria)	0										
VBL Rodas (Chaimite)	0	**48**									
VTL	61	**12**	4					10	32	15	
VTM (Guincho)	105	**18**	1					6	59	39	
VTPes	0	**28**									
VTPes-PC	0	**28**									
Auto-Maca Média	0	**18**									
Auto Tanque 10.000	0										
Tractor 6 Ton	28	**50**							28		
Semi-Atl 20 Ton (Granel)	11								11		
Contentor 20'	0										
VB Lagartas Sanitária	0	**104**									
VB Lagartas P	16	**76**	3					13			
VB Lagartas PC	4	**104**	3					1			
VB Lagartas Porta Mort	0	**76**									
CC Médio	0	**310**									
VB Lagartas Média Rec	1	**330**							1		
VB Lagartas Lig. Rec	1	**76**						1			
	387		606	0	0	0	0	1446	3718	882	
TOTAL			**2954**	**0**	**0**	**0**	**0**	**7049**	**18125,25**	**4.300**	**29.474**

(2) Opção B

TIPO	Qt	UC (litros)	EL. COMANDO		EL. MANOB	EL. APOIO COMBATE			EL. AP. SERVIÇOS		TOTAL
			CMD BRIG	MÓD. Ref. CIMIC	BAT	Esq PE	Btr AC (BAI/BLI)	Comp Eng	AGR Ap Svc	Comp TMs	
Atl Água 1.500	28		2		6		4	1	14	1	
Atl Gerador 10 Kwa	1	**10**							1		
Atl Gerador 45 Kwa	2	**15**							2		
Atl Gerador 60 Kwa	0	**20**									
Atl Lig	128		26		40		20	9	27	6	
Atl Médio	165		8		51		16	13	71	6	
Atl Pes	0										
Auto Água 5.000 l	2	**45**			1			1			
Auto Comb 4.500 l	7	**45**			1		1	1	4		
Auto PS (M816)	0	**34**									
Empilhador TT (med)	5	**50**					1	1	3		
Esp. Cabine TMs	0	**18**									
Esp. Reab c/Atl (90.17)	0	**50**									
Especial (Of. Elect.)	0	**25**									
Especial (Of. Mec.)	0	**25**									
Semi-Atl (Banhos)	0										
Semi-Atl (Cozinha)	14		1		5		3	1	3	1	
Semi-Atl (Latrina)	0										
Semi-Atl (Lavandaria)	0										
VBL Rodas (Chaimite)	0	**48**									
VTL	154	**12**	30		55		24	9	29	7	
VTM (Guincho)	236	**18**	8		76		38	13	86	15	
VTPes	16	**28**					15	1			
VTPes-PC	6	**28**	5		1						
Auto-Maca Média	19	**18**	2		3		2		12		
Auto Tanque 10.000	0										
Tractor 6 Ton	18	**50**							18		
Semi-Atl 20 Ton (Granel)	3								3		
Contentor 20'	0										
VB Lagartas Sanitária	0	**104**									
VB Lagartas P	0	**76**									
VB Lagartas PC	0	**104**									
VB Lagartas Porta Mort	0	**76**									
CC Médio	0	**310**									
VB Lagartas Média Rec	0	**330**									
VB Lagartas Lig. Rec	0	**76**									
	804		680	0	2200	0	1523	510	3382	354	
TOTAL			**3315**	**0**	**10725**	**0**	**7424,625**	**2486**	**16487,25**	**1.726**	**38.849**

DESCRIÇÃO	Qt	Nível de munições para 30 dias		Total		Peso	Volume	Peso	Volume
		1º 7 dias	Restantes 23	1º 7 dias	Restantes 23	(Kg)	(m3)	(Kg)	(m3)
Browing 12,7 mm	4	3.742	6.072	14.968	24.288	2.469,72	1,86	4.007,52	3,01
C Custaf	22	41	69	902	1.518	7.216,00	16,51	12.144,00	27,78
EAG3	801	213	345	170.613	276.345	5.289,00	3,51	8.566,70	5,69
Lança-Granadas 40 mm	51	113	184	5.763	9.384	1.600,83	3,19	2.606,67	5,20
MG 3	26	3.742	6.072	97.292	157.872	3.016,05	2,00	4.894,03	3,25
MILAN	8	116	188	928	1.504	3.854,00	79,81	30.832,00	129,34
Míssil A/A	6	111	141	666	846	2.890,50	57,28	17.343,00	72,76
Morteiro 120 mm	6	338	552	2.028	3.312	35.490,00	47,05	57.960,00	76,84
Morteiro 60 mm	6	88	138	528	828	1.584,00	4,48	2.484,00	7,03
Morteiro 81 mm	6	263	437	1.578	2.622	8.679,00	13,40	14.421,00	22,26
Pistola	119	24	46	2.856	5.474	42,27	0,02	81,02	0,04
TOTAL						72.131,38	229,11	155.339,93	353,21